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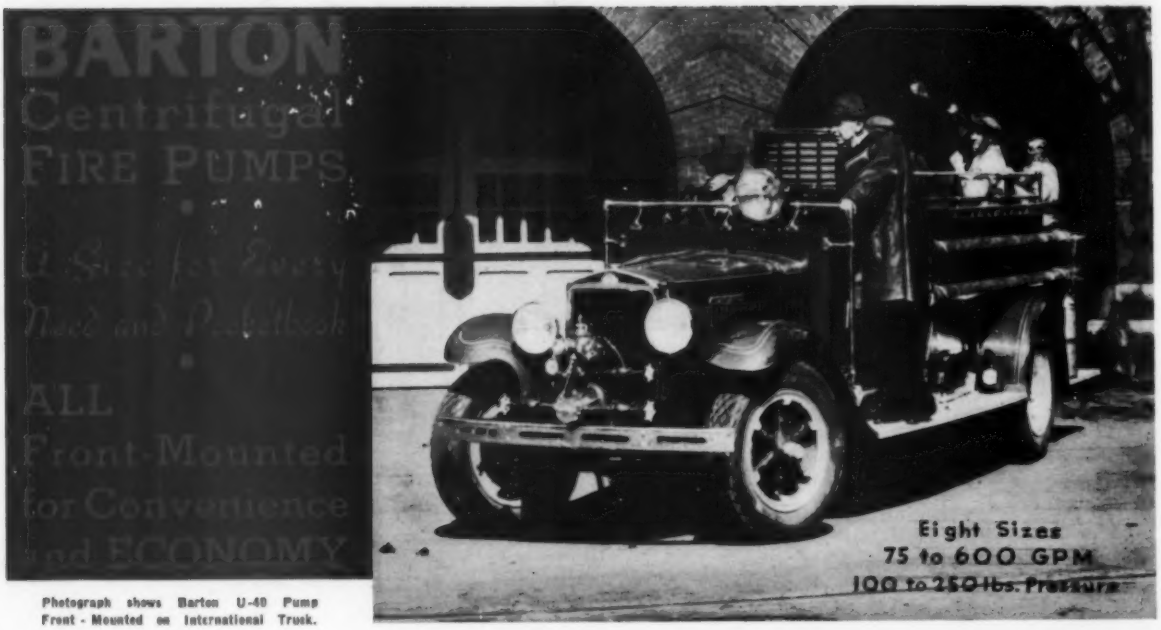
# FIRE ENGINEERING

*The Journal of the Fire Protection Profession Since 1877*

88, No. 11 NOVEMBER, 1935 Member A.B.C.—A.B.P.

Fire, Through the Medium of Burning Lacquer, Flowed Out into the Street When an Explosion Occurred in the Lacquer Plant of a North Kansas City Paint and Varnish Company




Photograph shows Barton U-40 Pump Front - Mounted on International Truck.

# DO YOUR TALKING—*RIGHT NOW*

## *. . . If You Want Some of that 1936 Tax Money for New and Better Fire-Fighting Equipment*

Ornamental lights on Main Street—new gadgets for the high school gym . . . certainly such things are fine, if they can be had WITHOUT sacrificing the efficiency of the Fire Department. Don't set back and see ALL the money go for luxuries, if YOU haven't the necessary apparatus to protect human lives and property.

Sometimes it pays to "talk turkey," Mr. Chief. And possibly NOW is one of those times. NOW—before that 1936 tax money is allocated for less important items—make it plain to your community the vital need for new and better fire-fighting equipment—MAKE IT PLAIN THE LONG CHANCE YOUR PEOPLE TAKE WITHOUT A MODERN, HIGH-PRESSURE FIRE PUMP.

U-Type: built in 350, 400, 500 and 600-gallon sizes—ALL Underwriters' tested.

Perhaps our literature will help you demonstrate to your council or county board what a marvelous fire pump the Barton really is . . . how inexpensive . . . how our SIMPLIFIED FRONT-MOUNTING SAVES PLENTY . . . how a Barton Pump can be front-mounted on practically any make of truck, new model or one now in service—completely installed for a few dollars.

**American Steam Pump Company . . Battle Creek, Michigan**

MILLION DOLLAR MANUFACTURER BUILDING PUMPS AND PUMPS ONLY SINCE 1873

MAIL THIS COUPON FOR FREE AND COMPLETE INFORMATION

*Without obligation, send me your literature on Barton Fire Pumps. We may be interested in a Barton Pump in the price class checked below.*

☐ Barton Pumps Under $200 (Rotary Type)

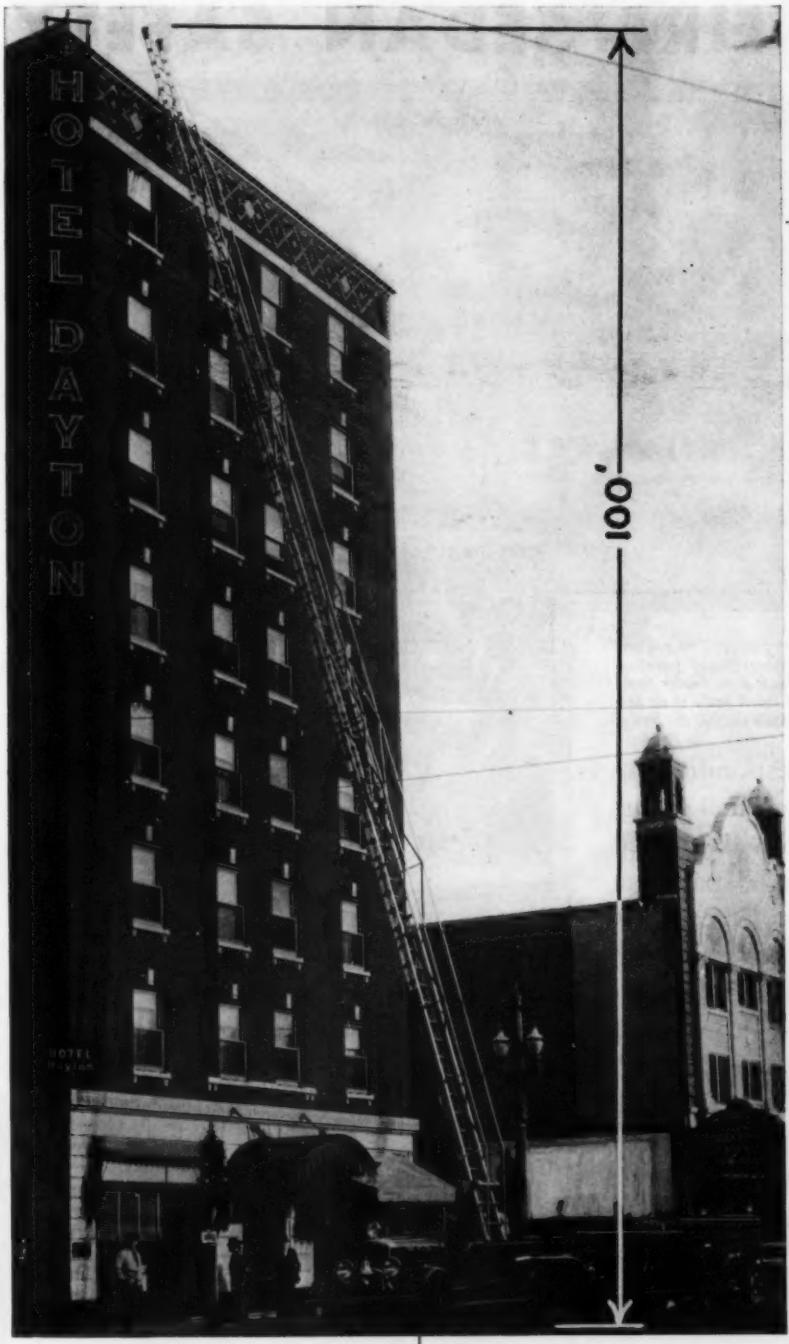
☐ Barton Centrifugal Pumps $315 to $600 (Underwriters' Tested and Direct-Drive)

☐ Barton Centrifugal Pumps $500 and up (Underwriters' Tested and Gear-Drive)

NAME.....ADDRESS.....

*FIRE ENGINEERING, November, 1935. Vol. 88, No. 11. Published monthly by Case-Shepperd-Mann Publishing Corporation, 24 W. 40th St., New York, N. Y. Subscription price: U. S., $2 a year; Canada, $2.50; foreign, $3; single copies, 25c. Entered as second class matter April 15, 1929, at the Post Office at New York, N. Y., under the Act of March 3, 1879.*

# *The* 100 *foot* PIRSCH LADDER




**ALL POWERED**

●

**ALL METAL**

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**100% CONTROLLED and OPERATED BY ONE MAN**

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**HYDRO-MECHANICAL**

●

***The Most Modern Device of its Kind in Existence***

●

ORIGINATED BY

**PETER PIRSCH & SONS CO.**

KENOSHA, WISCONSIN

# Proved!

## MACK FIRE SEDAN SAFETY

*MACK FIRE SEDAN—Type 19, 160 horsepower, 750-gallon, triple combination with pressure-volume centrifugal pump—100-gallon booster tank—1,000 feet of 2½-inch hose under seats and 150 feet of booster hose on rear reel. Closed body seats ten men, two in front and eight on longitudinal seats within the body.*

AN alarm—a pumper responding to the alarm with siren and bell going full blast. A heedless taxicab darts out of a side street directly in its path—a crash! The taxicab is demolished, but the apparatus returns under its own power and with no injury to its crew.

That is the safety resulting from inclosed construction of the Mack Fire Sedan.

That is the safety which Mack has pioneered on this continent; just as it has pioneered so many other safety features now standard on American apparatus —such as four-wheel brakes—power braking — left-side steer — mechanical aerial ladder hoist and windshields.

**SAFETY CLAIMS SUPPORTED BY FACTS**

*The safety features of the Mack Fire Sedan, designed and built by Mack for the Charlotte, N. C. Fire Department, were demonstrated in its first collision. The above picture shows what happened to a taxicab which, unheedful of the fire siren, darted straight into the path of the apparatus. The sturdy Mack Fire Sedan saved its firemen from injury and was able to return to quarters under its own power.*

●

Picture what would have happened if the apparatus had been of the conventional type, with the crew clinging to exposed running boards.

**MACK TRUCKS, INC., Fire Engine Division, 25 Broadway, New York, N. Y.**

# WHEN LIVES AND PROPERTY ARE AT STAKE LEADING CITIES

## *Choose* Firestone

IT IS not surprising that Firestone Tires are the choice of leading Fire Departments everywhere. For Firestone Tires are built different—they have three patented construction features not used in any other tire.

The body is built with Gum-Dipped High Stretch cords. Gum-Dipping, the patented Firestone process, soaks the cords in pure liquid rubber, insulating and coating every strand in every cord. This is why Firestone Tires run cooler and are stronger.

The Tread is made of a new and tougher rubber compound. This, together with the scientific non-skid design, gives greater traction and longer non-skid mileage. Firestone locks this wider, heavier and more rugged tread securely to the Gum-Dipped cord body of the tire by building two extra layers of Gum-Dipped cords (patented) under the tread.

These exclusive construction features are the reasons why Firestone Tires will give you greatest safety and dependability. Be sure to specify Firestone Tires when ordering new equipment.

*Listen to the Voice of Firestone—featuring Richard Crooks, Nelson Eddy, Margaret Speaks. Monday evening over Nationwide N. B. C.—WEAF Network*

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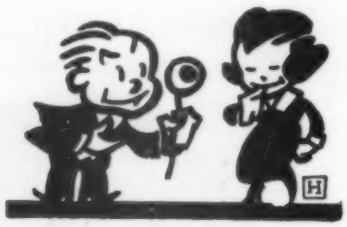
*A Consolidation of* FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

# FIRE ENGINEERING

*The Journal of the Fire Protection Profession Since* 1877

ROBERT H. LOCKWOOD, Associate Editor
FRED SHEPPERD, Editor
N. N. WOLPERT, Assistant Editor



## Thanks, Mr. Vaill!

THE progressive, up-and-going city of Winsted, Conn., believes in getting dependable guidance when buying fire apparatus. As good evidence of it, read this interesting letter just received from Theodore Vaill, local newspaper publisher and member of the volunteer fire department:

"The City of Winsted has instructed its fire department committee to purchase a Pirsch hook and ladder truck, similar to the one recently purchased in Thompsonville, Conn. It is the junior aerial type.

For your information it can be truthfully said that the sale of this Pirsch to Winsted was due to the advertising of that company in FIRE ENGINEERING. There are five fire companies in Winsted and the one to which I belong, Union Hose No. 1, subscribes to your magazine. We members who read the magazine regularly became interested through Pirsch's ads and asked the other members of the department to investigate the Pirsch. The result was the purchase."

The citizens of Winsted have good reason to feel highly satisfied with the purchase; Peter Pirsch & Sons Co. were naturally happy to make the sale; and we, of course, are mighty glad that the advertising pages of FIRE ENGINEERING served the important role of bringing buyer and seller together to their mutual advantage.

The Publishers

P.S. We appreciate Mr. Vaill's letter all the more because it came to us wholly unsolicited.

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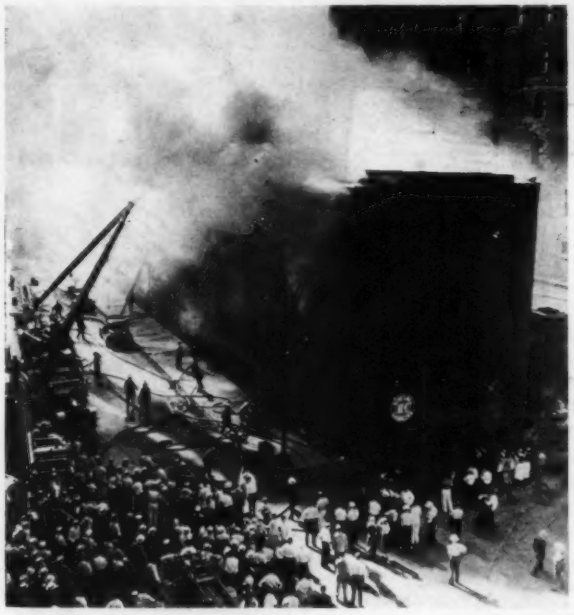
# IN EMERGENCIES LIKE THIS EVERY SECOND COUNTS!

12 WOMEN WERE RESCUED AT THIS FIRE BY THE CHICAGO FIRE DEPT. UNDER THE DIRECTION OF CHIEF FIRE MARSHAL MICHAEL CORRIGAN



**IN EMERGENCIES LIKE THIS where lives as well as property are in danger EVERY SECOND COUNTS! FIRE APPARATUS MUST GET TO THE FIRE QUICKLY AND SAFELY.**

## THE LIGHT FROM MARS

## COMMANDS

## INSTANT ATTENTION

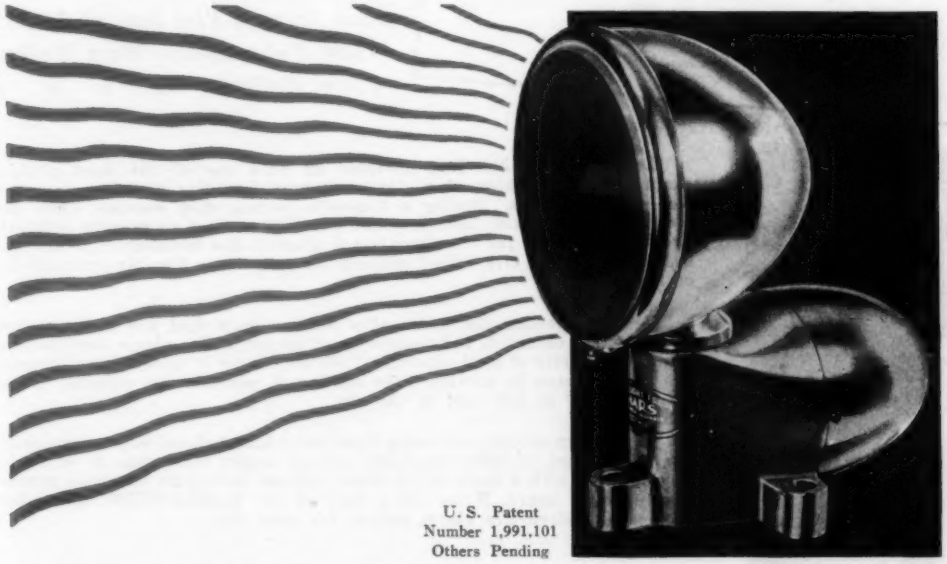
## IT CLEARS THE WAY

**BY WARNING MOTORISTS AND PEDESTRIANS OF APPROACHING APPARATUS.**

## THIS IS WHY

**CHIEF FIRE MARSHAL MICHAEL CORRIGAN HAS INSTALLED THIS LIGHT ON ALL OF CHICAGO'S FIRE APPARATUS.**

THE LIGHT FROM MARS **Throws a Powerful Beam of Red Light Ahead and to Both Sides of the Apparatus from Curb to Curb. Warns Cross Traffic Approaching Street Intersections in the Path of Fire Apparatus—This Light Oscillates Rapidly from Side to Side and at the Same Time the Reflector Inside the Light Moves Up and Down. These Two Motions Create a Figure 8 Beam of Red Light—Operated by a Special Electric Motor Completely Housed in the Base of the Light. You Simply Turn a Switch on the Instrument Panel and the Light Is Immediately in Operation.**



U. S. Patent Number 1,991,101 Others Pending

***There Isn't Another Light Like It!***

# MARS LIGHT CO., OAK PARK, ILL.

PROTECT THE LIVES OF YOUR MEN AND YOUR VALUABLE APPARATUS WITH THE LIGHT FROM MARS

***IN USE IN OVER 200 FIRE DEPARTMENTS • WRITE FOR FULL INFORMATION AND PRICE***

*We shall appreciate your mentioning* FIRE ENGINEERING *when writing advertisers*

# Startling Reduction in FIRE LOSSES at Lenoir, N.C. Demonstrates Value of GAMEWELL Municipal FIRE ALARM System

CITY of LENOIR
NORTH CAROLINA

OFFICE OF FIRE DEPARTMENT.
August 2nd, 1935

Mr. Chas. Berst,
District Sales Manager,
The Gamewell Company,
510 Peters Building,
Atlanta, Ga.

Dear Mr. Berst:

The installation of our Gamewell Fire Alarm System was completed and the system placed in operation March 27th, 1935. We have 93 Gamewell Fire Alarm Boxes in use in a city of approximately 7,000 population.

Since the installation, we have had 100% box alarms, which we feel is unusual for a city that has always depended on the telephone for reporting fires.

From March 27th. to August 1st, 1932, we had $309,000. worth of property at risk and a loss of $96,000. For the same period in 1933, we had $75,900. at risk and a loss of $42,420. In 1934, during a corresponding period, we had $96,200. at risk and a loss of $45,066. For this same period in 1935, or in other words since the Gamewell System was installed, to date, we have had $1,254,250. of property at risk and a loss of only $581.

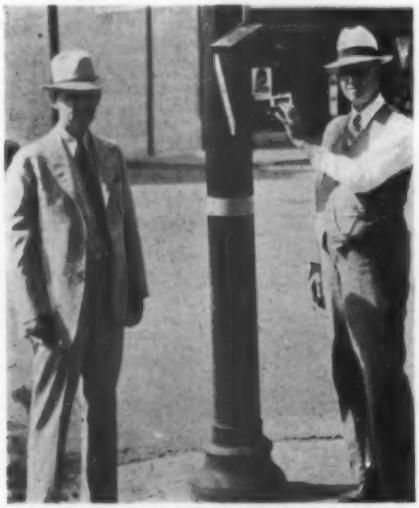
Our explanation of this small loss is that every alarm we have received has been a box alarm, which was fast and accurate, enabling us to get on the job more quickly, and thereby keep the loss low.

We are extremely proud of our low loss ratio and the fact that all our alarms have been box alarms. The Gamewell Fire Alarm System is fast, accurate, and dependable.

This letter is sent to you without solicitation.

Yours very truly,
Lenoir Fire Department
A. T. Cottrell,
Supt. of Alarms.

***100% Box Alarms Cut 4-Months Fire Loss to $581, Compared With Previous Average Fire Loss of $61,162, When Telephones Were Relied Upon Entirely*** » » » »



TWO LENOIR, N. C., OFFICIALS transmitting an alarm over their new Gamewell Fire Alarm System which has reduced the city's fire losses tremendously.—W. J. Lenoir, Mayor (right), and G. C. Courtney, Fire Chief (left).

**Lenoir, N. C., has just provided us with one of the most striking examples of the value of a Gamewell municipal fire alarm system that we have ever seen. During a 4-months period they received 100% box alarms which reduced their fire losses to $581 against an average 4-months fire loss of $61,162 for the three years prior to the installation of the new system when the city relied entirely on telephones for the transmission of fire alarms.**

**Besides showing the value of a modern municipal fire alarm system these figures establish the soundness of adequate fire alarm box distribution. In this city of approximately 7,000 they have 93 latest type Gamewell fire alarm boxes in service, thus making it possible for citizens to find a box quickly in any part of the city.**

**In the face of the convincing facts reproduced above, every responsible fire department or other municipal official should take steps to equip his city or town with a modern fire alarm system having an adequate number of fire alarm boxes. Write for a copy of our booklet FE700 telling how to plan a modern fire alarm system for your city.**

## THE GAMEWELL COMPANY

*"A Box A Block"*

NEWTON, MASSACHUSETTS

# FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 88 NOVEMBER, 1935 Number 11

## With the Editor

**One Way of Aiding the Department**

Among the factors which frequently delay the operation of the Fire Department are blocked hydrants, due to parked cars, and traffic congestion, largely the result of cruising taxicabs.

No matter how stringent the laws prohibiting parking in front of hydrants, this evil still persists.

Traffic congestion, resulting from the great number of cruising taxicabs, has been a handicap to Fire Departments for many years, and there apparently has been no practical means of eliminating it, or even reducing it appreciably.

The city of Detroit has been trying out a new plan to correct, in large measure, both of these troubles, and has met with considerable success. In that city, taxicabs alone are permitted to park in front of hydrants, but the operator must be in the machine while the car is so parked. In the two year trial period there has been no instance of delay in connecting an engine to a hydrant due to blocking of the hydrant by taxicabs, and at the same time, the number of cruising cabs has been reduced remarkably.

Taxicab drivers, as a rule, are glad to have a place where they can park, rather than float around. Furthermore, under the new plan the public knows where to look for cabs, and they are always to be found sufficiently near for convenient use, for fire hydrants are usually located at or near intersections, and such spots are ideal for parking of cabs. Taxicab drivers have proven well able to see that these spaces are kept open for cabs, and cabs alone.

The Detroit plan is a sensible one, and it is surprising that it had not occurred to city officials earlier. Removal of cruising cabs speeds up traffic tremendously and assures the fire apparatus less congestion on the way to fires. And when a company arrives at a fire, they know that, through the cooperation of the taxicab drivers, they will be able to roll right up to the hydrant and make quick connection.

The plan is one which deserves trial by those cities having a large taxicab population and experiencing parking troubles.

Fred Sheppard

# Protecting London from Fire

Chief Chambers recently returned from a European trip, during which he made a study of London fire fighting methods. What he found is reviewed in the following article

By CHIEF ARTHUR E. CHAMBERS,
Fire Department,
Yonkers, N. Y.

Chief Arthur E. Chambers

VISITING London, I took advantage of the opportunity presented to inspect the famous London Fire Brigade, arriving at Headquarters, on Southwark Bridge Road, S.E.1., where I met Major C. C. B. Morris, M.C., Chief Officer, was warmly welcomed, accorded every courtesy and extended the privilege of visiting any part of the organization I might be particularly interested in. I was introduced to Mr. Warren, Senior Divisional Officer, who was asked to lay out a schedule for me, and to detail such men, representing the various branches of the service that I might care to study. It is to these two gentlemen and to H. G. Davies, Station Officer in the Inspection Branch, that I owe my deep gratitude for the kindly reception and efforts put forth, to accord me a pleasant visit, and the opportunity of making intimate contacts with the Brigade in every detail.

The Honorable E. Cruse, Chairman of the London Fire Brigade Committee, a very courteous and distinguished gentleman, who devotes a great deal of time and thought to the needs of the Brigade, and who is justly proud of the accomplishments of the Chief Officer and his men, asked me to extend to the Chief Officers in the United States his felicitations.

### London Brigade Divisions and Districts

London, with its area of 122 square miles, known as the London County Jurisdiction, is managed by the London County Council, and for the purpose of Fire Brigade administration, is divided into two divisions, a northern and a southern; the northern division comprises the county area north of the Thames, except a part of the city of London and a small adjacent area; the southern division is the county area south of the Thames in addition to part of the city of London and a small adjacent area, and to that part of North Woolwich which is included in the county area.

The Brigade divisions are sub-divided, each division comprising three districts:

**Northern Division:**

"A"—West and north west.
"B"—North and central.
"C"—East and north east.

**Southern Division:**

"D"—Southeast and North Woolwich.
"E"—Southwest. "F"—Part of the City of London and the small adjacent area, including Headquarters and all river stations.

### Divisional Officers and Stations

Each division is in charge of a Divisional Officer, aided by an Assistant Divisional Officer.

Each district is in charge of a Superintendent, and his deputy is known as the District Officer, who is also in charge of the Superintendent's station to which a Station Officer is not attached.

London has an authorized Fire Staff of 1,949 with an administrative, technical, clerical and workshop staff of 156.

There are 62 Fire Brigade Stations; 3 fire boat stations; 6 dual purpose (combination); 68 escape vans; 87 pumps; 13 turntable ladders; 2 emergency tenders; 1 foam tender; 3 foam generators; 8 lorries; 3 tenders; 18 cars; 1 canteen van; 4 river floats (fire boats); 1,694 fire alarm boxes; 30,952 hydrants; 57 miles of hose; fire calls 1933—5,877, 1934—8,742.

### Great Fires in London

London is one of the most progressive cities in the world as regards Fire Prevention, having learned vividly from the past, just what poor construction can do toward making a conflagration a reality.

Four times the city of London was burned to the ground; in 798; 982; 1086; and in 1212. In September 1666 starting near the Tower, fire in three days swept across the city as far as Holborn and the Temple, destroying St. Paul's and 86 other churches and 13,200 homes. The Southwark fire in May 1676 destroyed 500 homes; the Wapping fire in 1794, 630 homes; with a loss of £2,000,000.*

The earlier fires spread so far, largely, because houses were built of inflammable materials, and as long ago as 1189, Henry FitzAilwin, first Mayor of London, recommended the use of stone instead of wood, at any rate for the party walls.

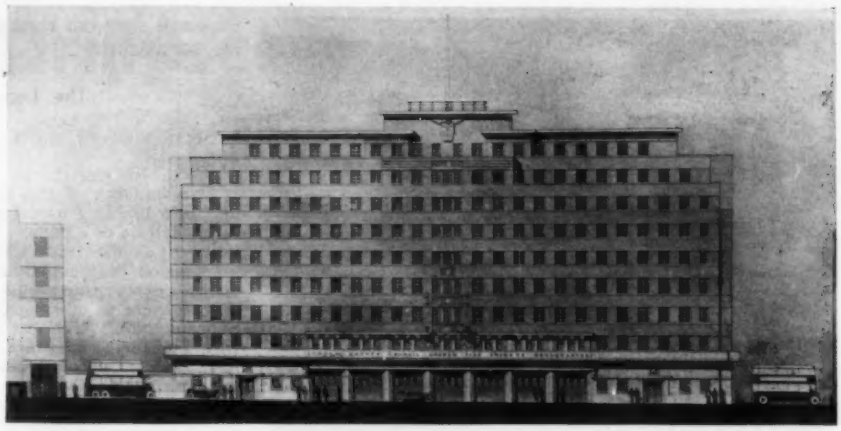
It was not until the end of the Seventeenth Century that Fire Brigades were organized by the fire insurance offices and in 1774 Parliament decreed that every parish should provide three or more proper ladders, of one, two and three stories high. The insurance companies' private brigades were in 1832 formed into one brigade, known as the London Fire Engine Establishment, with 19 stations and 80 men. From 1836 the work was supplemented by another voluntary organization, known as the Society for the Protection of Life from Fire, which maintained from 80 to 90 stations in central London.

### London Fire Brigade Formed

In June 1861 the great fire in Tooley Street convinced the authorities something had to be done, and after negotiations between the Government, the Metropolitan Board of Works, and the Insurance Companies, the Metropolitan Fire Brigade Act of 1865 was passed,

*The English Pound Sterling is quoted at about $4.92.

placing upon the Board the duty of extinguishing fires. Accordingly, the Board, during 1866 and 1867, took over the staff, stations and equipment of the establishment, the parish engines and men in charge of them, the escapes and staff of the Society for the Protection of Life from Fire. In 1889, in accordance with the Local Government Act 1888, the Brigade passed under control of the London County Council.



Front Elevation of Proposed New London Fire Brigade Headquarters, Lambeth

### Work of Brigade in Air Raids

During the World War, raids were made over London, the first, May 31, 1915; two more in September and one in October of the same year. In 1916 there were three; in 1917 thirteen and in 1918 five; making a total of twenty-five. Seven were by airships and eighteen by airplanes. Twenty-two at night and three by day, the last on the night of May 19-20, 1918. There were 922 bombs dropped, of which 355 were incendiary and 567 explosive; 524 persons were killed and 1,264 injured; the Brigade responded to 224 fires and rescued 138 people from danger. The King conferred on 47 officers and men of the Brigade the medal of the Most Excellent Order of the British Empire "for conspicuous courage and devotion to duty in the rescue of persons from buildings wrecked by hostile aircraft."

London has several innovations for aid in extinguishing fires which are most laudable and worthy of mention.

### "Foam Inlet" Protects Spirit or Oil Contents

A foam inlet is a device for conveying foam direct from an appliance in the street to any portion of a building where inflammable spirits or oils are used or stored; the installation consists of an ordinary female coupling provided in the external wall about 2 feet above the pavement level and connected to a length of 2½-inch pipe, carried down to the chamber to be protected, terminating at an approved position. They are required in all locations not readily accessible for fire attack by ordinary means, warehouses, trade buildings of large cubical extent, places of amusement or public entertainment and other buildings being especially specified; a separate inlet is provided for each risk; piping is of galvanized wrought iron, screwed and socketed and the lay-out as direct as possible, the use of elbows not being allowed.

The inlets are inclosed in an iron box, the door of which is glazed with wire glass. The words *"Fire Brigade Foam Inlet"* are painted on the inner face of the glass in 2-inch block letters. Adjacent to each inlet a notice indicates the location to which it terminates. The door of the box is fastened by means of a spring lock and so arranged that it can be opened from the inside, without a key, after the glass is broken. The door is large enough so that hose can be connected to the inlet, even if the door should not open after breaking the glass; making an ideal arrangement for extinguishing oil burner fires from the street, before entering the building.

### Hydrants All Below Ground

There are no hydrants above ground in London, these being located at advantageous points below ground level, having a sluice valve, with single or double outlet, fitted with a "command" cock connected with the distributing main, so that the hydrant may be repaired without shutting down the main or disturbing other service. The hydrants are set in an iron frame and have a surface cover with a hinged door, the valve turning to right, or clockwise to open and are placed from 50 to 550 feet apart, according to risks. In districts where there are no large premises, or houses that are less than 40 feet in height, they are spaced from 450 to 550 feet apart. Hydrants are fitted with a frost valve for the purpose of draining the elbow after using.

The average pressure of the mains is from 40 to 45 lbs., and where high and low pressure mains are situated in the same locality, the high pressure water may be diverted into the low pressure mains. The size of the largest mains are 36-inch and the smallest service main three inches. The average flow from the double hydrants is 850 gals. per minute and from the single hydrants 300 gals. per minute.

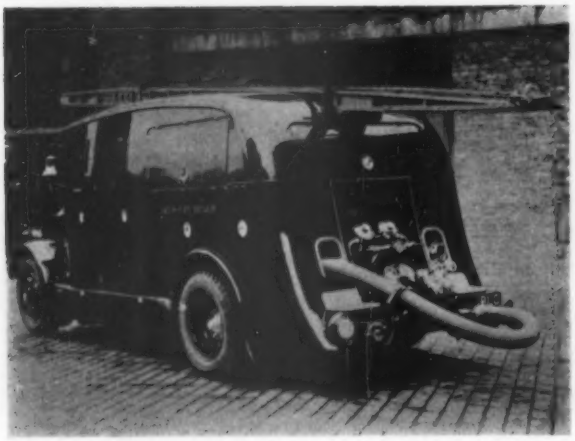
### How Hydrants Are Indicated

Hydrants are indicated by an "enameled hydrant tablet," placed on the wall of a building in a conspicuous position adjacent to the hydrant. A single hydrant is indicated by "H" and a double hydrant by "HD"; a diamond shaped tablet indicates a hydrant is immediately below, and an oval tablet that a hydrant is located on the opposite side of the street; a right angled tablet is used on the corner of buildings. The tablets are enameled with blue letters and white facings for use on dark backgrounds and with white letters and blue facings for light backgrounds.

Where double hydrants are below a 500 gal. water flow a single "H" is used; an experiment is being tried using red and white enameled tablets to indicate mains of 12-inch and over; indicating good water supply.

### London's Fire Alarm System

Fire alarm equipment is installed and maintained by the General Post Office, at the expense of the Council. The claim is made that no person in the County area is



**Completely Enclosed Apparatus for London**

An all-enclosed motor apparatus has been added to the Fire Department of London, England. It is considered the first of its type to combine in one machine, a 600-gallon pump, a 40-foot ladder, oxygen breathing apparatus and hose. The streamlined body is designed to protect the men against the weather.

required to travel more than 440 yards to reach an alarm box. An enameled instruction plate on the head of the standard bears the words: "Break glass, pull knob, wait for engine" and in parts of the east end of London, the instructions are repeated in Yiddish. Each box alarm has a four-figure number, the first two representing the station, the second two the alarm number. If either number is less than 10, it is preceded by 0, for example, No. 3 fire alarm on No. 2 station's system is numbered 0203. The station is always counted as fire alarm No. 1, a fire alarm north of the station is numbered 2 and the next eastward is No. 3.

Street boxes are wired on either the closed or open circuit system, the present system in use in London is an open circuit system, a single wire, with earth return, being used between each alarm box and the station to which it is connected; in practice the single wire is generally duplicated, and in some cases a wire return is used. The pulling of the handle in the box closes the circuit, which drops a numbered indicator at the station and actuates a bell which is in common to all indicators on the alarm board; the bell continuing to ring until the operator inserts the cut-out plug cutting off the battery. Provision is made for telephone communication between box and station.

About 1907 a considerable number of alarm boxes were altered to incorporate electrical connections on a modified system known as the "buzzer selector" system, and since then new stations have been equipped with a special type of indicator board; alarm boxes installed before that time and not converted are known as the "old pattern." A closed circuit system is now installed experimentally at Headquarters, the numbers being registered by punched holes in addition to bell ringing. Digits greater than six are not used; a digit is not repeated concurrently in a number; the total of the digits in a number is limited to 11. Most of the lines are carried with other Post Office lines in ducts underground, but in some outlying districts overhead lines are used.

### Ancient Lights

An old law of England states that: "No building can be built near a building bearing the sign 'Ancient Lights,' that will shut out the full light of day" from the building so marked.

### The London Building Act

Section 81 of the London Building Act, 1930, provides that:

"No building of the warehouse class and no building or part of a building used for the purpose of trade or manufacture, shall be of a cubical extent exceeding 250,000 cubic feet, unless it is divided by division walls in such manner that no division of the building, or part of the building is of a cubical extent exceeding 250,000 cubic feet. The Council may consent to additional cubic extent on the report of the Superintending Architect and the Chief Officer of the London Fire Brigade, if they are satisfied that proper arrangements have been, or will be made and maintained, for lessening the danger from fire."

This consent remains in force only during such time it is actually used for the purpose for which consent was granted.

The division wall must be carried up at least 15 inches above the roof or gutter, and the part so carried up must be of equal thickness to that of the wall in topmost story. If the building exceeds 30 feet in height, the party wall must extend at least 3 feet above the roof. No division can exceed 500,000 cubic feet in extent, nor have a floor area in excess of 40,000 sq. feet. In practice, a room in excess of 250,000 cubic feet is not allowed below the ground level.

### Height of Buildings

Sect. 51 of the Act reads:

"That a building (not being a church or chapel) shall not be erected of or be subsequently increased to a greater height than 80 feet (exclusive of the two stories in the roof or ornamental towers, turrets or other architectural features or decorations) without the consent of the Council."

In practice the total height allowed by the Act is about 110 feet, but in certain instances buildings of somewhat greater height have been allowed.

(*To be continued*)

**Warehouse Fire Calls Out Most of London Department**

All fire apparatus and every available fireman in London, England, were called out to fight a fire which destroyed a warehouse of the Colonial Wharves, Ltd., which contained 400 tons of crude rubber, and large amounts of tea. The heat of the burning rubber was so intense that a number of barges in the Thames River caught fire. One of the city's costliest fire units was abandoned when molten rubber which flowed from the building made it immovable. From the other side of the river, and aboard hired river boats, thousands witnessed the firemen at their work. The damage was considered well over $1,000,000. The photograph shows firemen fighting the fire from the river side of the building.

# Detroit Drill School Explosion

## Is Explained by Subsequent Tests

FOLLOWING exhaustive tests, a report was submitted by the Detroit Fire Department containing the opinions of technical experts regarding the explosion which occurred in a room at the department training school on July 31 and which resulted in the death of Assistant Chief Archie McClellan, of Port Huron, Mich., and injuries to forty-three spectators.

The room in which the explosion occurred is about the center of the west side of the six-story section of the building, on the first floor. It is fifteen feet by ten feet ten inches, by thirteen feet five inches high and contains about 2,183 cubic feet. The ceiling and floor are of concrete, with two vents in the ceiling, an 8-inch one in the center, covered by a close fitting cast iron cover and one in the northwest corner of the room. The walls are of solid brick. The north and south walls are without openings, and the east and west walls have a window and door each. The room is ordinarily used as a demonstration room for gas masks, chemical extinguishers, automatic sprinklers, etc.

### Description of Test Room

It was provided with a carbon dioxide automatic installation consisting of two drawn cylinders, each 8½-inch outside diameter and 57-inch high. These cylinders were connected to sixty-eight feet of heavy brass ½-inch tubing installed around the walls of the room. The tubing was fitted with two automatic door releasing devices and six discharge nozzles with openings of 5/32-inch. Two of the nozzles were on the north and south walls, and one each on the east and west walls, thirty-four inches from the floor and pointing toward the floor at an angle of about forty-five degrees. Each of the cylinders contained fifty pounds of liquid carbon dioxide.

The room was also provided with an Aero automatic fire detecting system, and a sprinkler system consisting of four 165° heads, located about one foot from the ceiling. The lighting equipment consisted of four 100-watt lamps, enclosed in vapor-proof globes, mounted on the north and south walls, 6½ feet above the floor.

For the demonstration, a quantity of gasoline was poured into a galvanized pan, two by three feet and 1½-inch deep, and weighing about eight pounds when empty. The average distance from the pan to the nozzles was about five feet. From two to three minutes elapsed from the time the quart of gasoline was poured into the pan until the liquid was ignited. After the match was tossed by the demonstrator into the pan, he stepped out of the east door of the room, closed it, and stood outside the glass panel in the door to watch operations.

### Gas Explodes

Flames rose six to eight feet. In about seven seconds, the carbon dioxide gas was released. About five seconds (various witnesses stated up to two minutes) later the explosion occurred. Some observers said that the gasoline pan rose about two feet from the floor just prior to the explosion. The blast forced out all panes in the east window, some of the panes in the west window, and cracked two others. Glass was scattered for a distance of seventy-five feet, while flames were projected out fifteen to twenty feet.

In order to find the cause for the explosion, tests simulating the original demonstration were conducted on August 16 by the following investigators: A. H. Nuckolls, Chemical Engineer, Underwriters Laboratories, Chicago; Alfred H. White, Professor of Chemical Engineering, University of Michigan; Frank Burton, Consulting Engineer, Detroit; Ormund Rugg, Chief Chemist, Glass Plant, Ford Motor Company; Harold Mercer, Superintendent, Glass Plant, Ford Motor Company; H. H. Mills, Chief Safety Engineer, City of Detroit; Robert Loughead, Chief Engineer, Michigan Inspection Bureau, Detroit, and Fred DeVoist, Chief Chemist, Department of Health, City of Detroit.

During the tests, considerable turbulence in the air was created by the discharge of carbon dioxide, and at some of the tests, the pan was lifted as high as three feet.

The findings of some committee members follow:

### H. H. Mills

"Under ordinary conditions the mixture of unconsumed gasoline vapors or $CO_2$, with the air in the room, would be of such uniformity that the mixture would be too lean to ignite, but with the blast of $CO_2$ on the floor, the unburned gasoline vapors or $CO_2$ would be forced upward and probably stratified with the result that an explosive mixture was formed and an explosion made possible, although the quantity of gasoline vapors or $CO_2$ was not ample to fill the room to cause a major explosion. The conditions for such stratification of gases, were ideal considering the size and dimensions of the room.

"The accident and the tests clearly demonstrate the impossibility of predetermining the action of flammable or explosive mixtures."

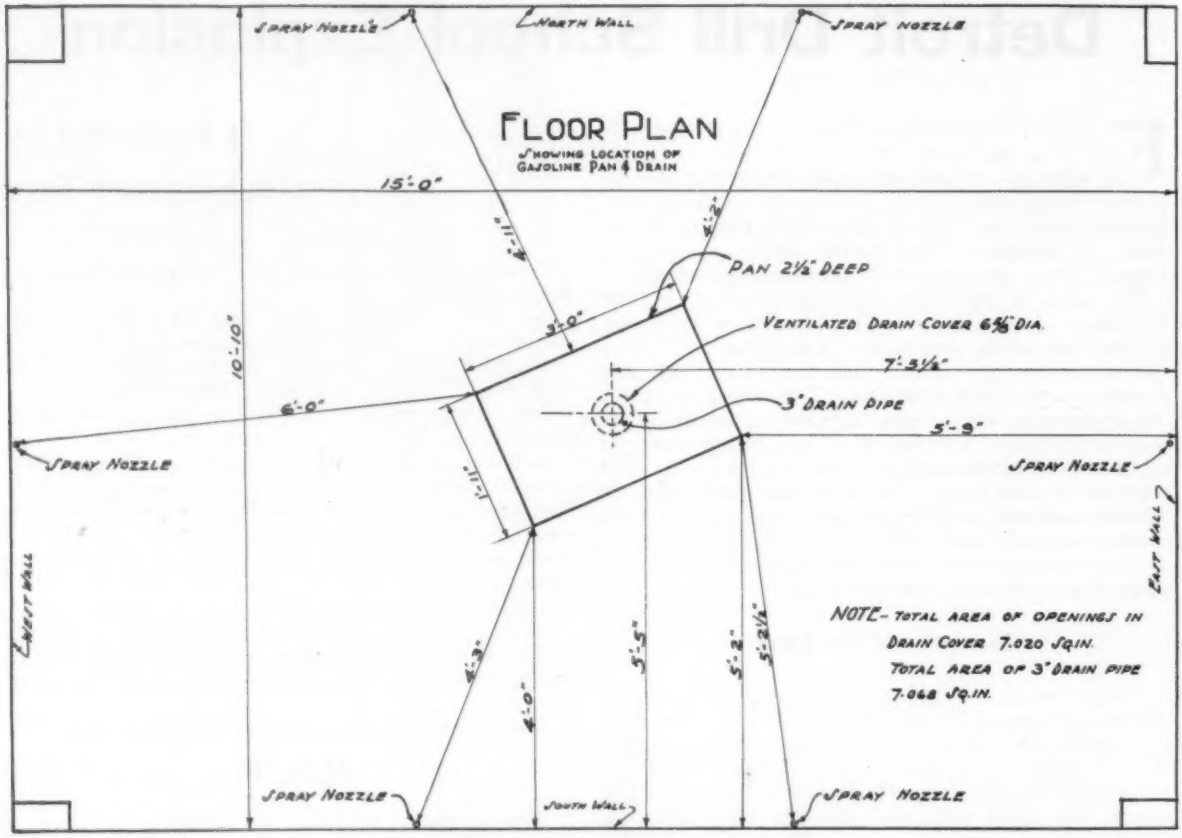
### Ormund Rugg

"It is my opinion that, if the pan of gasoline had not been lifted by the $CO_2$ pressure from the jets and violently spilled or splashed there would not have been an explosion. The unburned gases caused by the spraying of the gasoline mixing with the oxygen in the air reached a point of saturation where they became combustionable."

### Frank Burton

"When the carbon dioxide was released from the jets pointing down at an angle of 45° the various streams of gas met near the floor and were then deflected upwards, since each jet balanced the force of the one opposite to it. In consequence, the pan containing the gasoline was lifted bodily upwards and the burning gasoline was sprayed into the upper part of the room. Although some of the gasoline burned there must have been a portion of the gasoline which was vaporized in an atmosphere containing so much carbon dioxide that it could not burn. When, however, this reached the upper part of the room where the carbon dioxide content was lower and the oxygen content higher, there was a sudden combustion of the gasoline resulting in an explosion.

"This explosion was the result of a number of conditions, such as the size of the room, the height and angle at which the jets were set, the size of the gasoline pan, etc. If any of these conditions were materially changed, it would probably be impossible to reproduce the explosion. During the




tests made yesterday there was no explosion when the angle of the jets was altered.

"It seems so impossible that an explosion could be produced in this way that I was not inclined to believe it possible until I witnessed the reproduction of the phenomena."

### Professor Alfred H. White

"When the jets of carbon dioxide first struck the floor and were carried to the pan of gasoline the pan jumped at least two feet in the air with the gasoline still blazing. The flame was not extinguished but in about two seconds there was a bright flash in the room and the windows were blown out.

"I had not anticipated such a definite explosion. I had thought that the increase in pressure caused by the expansion of the hot gases, together with the added effect of the carbon dioxide released, might cause the windows to be blown out by the gradual accumulation of pressure. What took place, however, was a definite explosion of a mixture of gasoline vapor and air. The only explanation I have for this is that when the pan containing the blazing gasoline was thrown in the air by the jets of carbon dioxide gas from the fire extinguisher that the liquid gasoline was scattered as spray. This spray volatilized almost at once and formed a localized pocket of explosive mixture which flashed from the flame of the gasoline which was still burning in the air."

### A. H. Nuckolls

"It appears from the foregoing that the explosion which occurred in the Smoke Room of the Firemen's Training School, July 31, was caused by the combustion of gasoline. It was evidently a localized gasoline explosion of a low order. The vaporized gasoline at the moment of the explosion was not distributed throughout the room, a quart of gasoline being capable of rendering only about 400 cubic feet of air flammable or explosive, but was concentrated in a mixture with air in a space probably near the center of the room. As would be expected under such circumstances the pressure effect was comparatively low, being of the order of about one to two pounds per square inch, which was sufficient to blow out the windows. The windows of ¼-inch wired glass were probably not capable of withstanding a pressure much, if any, above 135 pounds to the square foot.

"It may be inferred from a study of the flame phenomena observed when the explosion occurred during the demonstration July 31 that a considerable portion of the gasoline had not burned at the time the windows were blown out. The large amount of flame projected from the windows extending a horizontal distance of about ten feet, which severely burned several observers, was probably due mainly to vaporized gasoline and not carbon monoxide[1] from the partial combustion of the gasoline. The conditions existing in a room containing 2,200 cu. ft. of air and about a quart of gasoline would preclude the formation of such a large volume of carbon monoxide in such a short period of time even with carbon dioxide being rapidly discharged into the room.

"It appears therefore that the pressure effect which ruptured the windows was due to the combustion of much less than a quart of gasoline probably about a pint. This inference is confirmed by the results of the third test in which the pressure effect was approximately reproduced by the combustion of about a pint of gasoline.

"It is clear that there was sufficient oxygen in the air for the combustion of the gasoline[2]. The dilution of the air by the carbon dioxide discharged into the room, near the floor level, during the small interval of time between the operation of the system and the explosion, was evidently not sufficient to retard combustion to any marked extent.

"The discharge of the carbon dioxide at high velocity from the six 5/32-in. outlets evidently caused a marked turbulence in the air of the room. In addition there was an upward movement of air and gas near the center of the room. This

[1]Note: Carbon monoxide is lighter than air and at least 12½ per cent by volume is required to form a flammable mixture with air.

[2]Note: Theoretically, 32 cu. ft. of oxygen would be sufficient for the combustion of a pint of gasoline. The room contained about 460 cu. ft. of oxygen at the start of the combustion. The partial pressure of the oxygen remaining after combustion would be 0.195 which is ample for combustion.

movement was probably at a maximum when the outlets were at an angle of 45°. Naturally gasoline in both the liquid and vapor phases was blown upward with the result that the liquid was vaporized somewhat more rapidly, and the vaporized gasoline was rapidly diluted with air forming a more combustible mixture and thus mechanically bringing about conditions which facilitated the communication[3] of the flame from the burning portions of vapor to the adjacent unburned portions. These conditions, being highly favorable to a sudden increase in the rate of combustion with resulting increase in the maximum pressure, appear to be the underlying cause of the explosion which occurred in the Smoke Room July 31 and also of the explosion reproduced in the third test.

Other factors including the elevated temperature produced by the burning gasoline prior to the discharge of the carbon dioxide gas and the small pressure rise caused by the combustion and the discharge of the carbon dioxide gas contributed to the increase in the combustion rate but the underlying cause as indicated above, was the turbulence together with the dilution of the gasoline by the air as it was blown upward.

"It is not thought that any minor difference in the conditions or in the time of operation of the release device would have prevented the explosion in the Smoke Room.

"The movement of the pan, containing the gasoline, upward undoubtedly caused a more rapid formation of the explosive mixture of gasoline vapor and air, thus contributing to the intensity of the combustion and the resulting explosion.

"It is generally supposed by firemen and others trained in practical fire prevention work that when the quantity of a flammable liquid, such as gasoline, is not sufficient to give enough vapor to form a flammable mixture with the air in an enclosure that there is little, if any potential explosion hazard. It is not surprising, therefore, that the explosion hazard from the combustion of a quart of gasoline in the Smoke Room of the Firemen's Training School, the net capacity of which is of the order of 2,200 cu. ft., was not recognized in advance. Further the two fire extinguishing systems were considered ample to cope with the situation. Thousands of demonstrations apparently similar to the one which resulted in an explosion have been safely conducted.

"It is clear that the essential conditions bringing about an explosion hazard in this case relate to the rapid dissemination of the vaporized gasoline in the air together with a marked turbulence in advance of the formation of the non-explosive atmosphere by the discharge of carbon dioxide, a situation that is unusual and evidently complex in its nature."

[3]Note: Turbulence in a flammable mixture increases the frequency of the effective collisions of the gas or vapor and air molecules and thus accelerates the combustion particularly in case of a lean mixture.

## Officer Killed by Fall at Drill Tower

Captain John J. McCarthy, of Engine Company No. 4, Hartford, Conn., Fire Department, was instantly killed when he fell ninety feet from the top of the department's new steel drill tower on Huyshope Avenue. With three members of his company, he was going through a drill when sudden pressure in a roof line caused the hose to get out of control. Captain McCarthy lost his balance and fell to the ground.

Upon arrival at Hartford Hospital he was pronounced dead, but death was believed to have occurred when he fell at the tower. Chief John C. Moran was an eye-witness to the tragedy and immediately notified all members of the Fire Commission.

It was the first fatal accident to take place at the new steel drill tower, which was used this year for the first time under auspices of the department's drill school.

Captain McCarthy was forty-seven years of age and joined the Hartford department on January 17, 1916. He leaves his widow, two sons and three daughters.

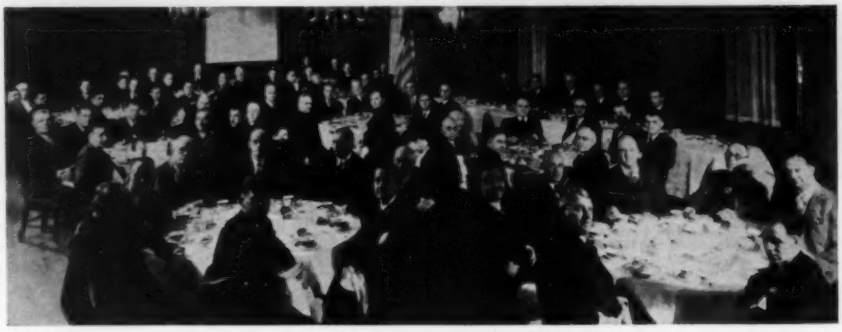
THOMAS F. MAGNER.

## Massachusetts Chiefs' Club Meets

Colonel Paul G. Kirk, Commissioner of Public Safety of Massachusetts, was the guest and speaker at the luncheon and meeting of the Fire Chiefs' Club of Massachusetts, held in the Parker House in Boston on October 16.

Chief Charles L. McCarthy, of Worcester, presided. Stephen C. Garrity, State Fire Marshal, spoke for a short time and introduced Commissioner Kirk. The latter was elected an honorary life member of the club. It was announced that the annual Christmas party and ladies' day will be held on December 18 at the Parker House Roof Garden and that the New Hampshire Fire Chiefs' Club has been invited to attend. The November meeting will take place in Worcester.

HARRY BELKNAP.



Meeting of Massachusetts Chiefs' Club at Boston

## Work of Los Angeles Fire College

The Fire College of the Los Angeles Fire Department has developed an extensive system for training its men and for cooperating with other organizations.

Every uniformed member of the department is taken to the hill territory and given practical instruction on the control and extinguishment of brush and grass fires. An instructor is detailed to the CCC camps and city parks to train the members in the fundamentals of fighting brush and grass fires. Two instructors are also supplied for the course in Civil Administration given by the University of Southern California.

A complete set of instruction sheets, consisting of four volumes, has been placed in the library of every engine house and special bureau of the department.

All members assigned to the teaching staff are graduate members of the course in vocational teaching given by the University of California at Los Angeles.

The department has had many requests for teaching material used by the college, and for the use of the motion pictures and slides made to assist in the instruction of its men. There has been considerable correspondence because of the many requests from other departments and many foreign countries for information on specific problems.

## Electricians' Association Changes Name

At the annual convention of the International Municipal Electricians' Association, held at Richmond, Va., October 14 to 16, it was voted to chage the name of the group to the National Municipal Signal Association.

The association was formed forty years ago by the fire alarm superintendents. The constitution adopted at that time did not permit chapter activities or sectional meetings. Under a new constitution, which has been adopted, local chapters may be formed.

The forty-first annual convention will be held at New York City, during August, 1936. C. E. Van Fleet, Chairman of the Convention Committee, believes that it will be the largest convention in the history of the association.

The new offcers are Herbert A. Friede, Superintendent of Fire Alarms, Washington, D. C., President; A. L. Pierce, Wallingford, Conn., First Vice-President; Everett Zeh, Schenectady, N. Y., Second Vice-President; E. L. Layne, Denver, Col., Third Vice-President. The other members of the National Board of Directors are Joseph Dempsey, Long Branch, N. J., C. E. Van Fleet, Mt. Vernon, N. Y.; C. S. Downs, Treasurer, Altoona, Pa., and W. H. Harth, Secretary, Columbia, S. C.

**How a Fire Starts by Spontaneous Ignition**

These photographs show the action of spontaneous ignition. The waste was soaked with linseed oil and dryers to accelerate oxidation. In less than an hour smoke appeared, and in less than three hours, the waste burst into flame.

# Spontaneous Ignition in Industry

The following article, which explains in detail some experiences with self-heating, is reprinted through the courtesy of the Factory Mutual Record.

IT is somewhat of a standing joke that any fire, the cause of which cannot be definitely determined, is usually ascribed to spontaneous ignition.

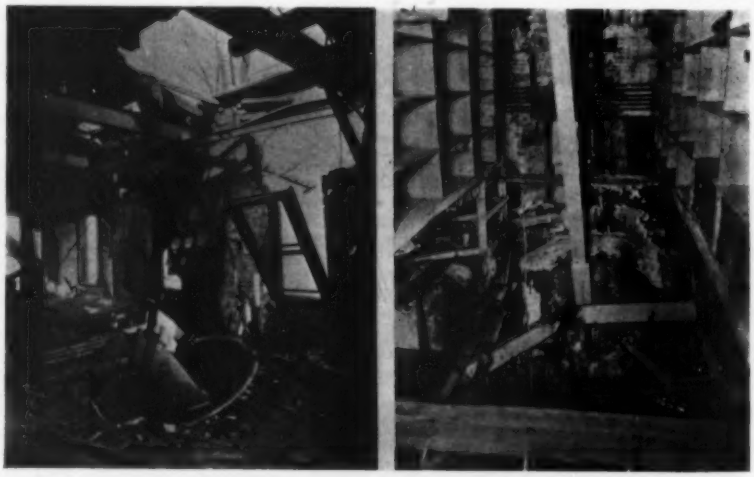
Although there is a too ready tendency to blame spontaneous ignition for fires whose origin is obscure, nevertheless it is a very important fire cause and produces more damage than is generally appreciated. In the last six years, spontaneous ignition has been the quite definite cause of seven hundred twenty-four fires in Factory Mutual plants, with an aggregate loss of over $1,000,000, or more than twelve per cent of the total loss during this period. Spontaneous ignition is insidious, because it often starts fires in out-of-the-way places, frequently when no one is nearby to discover them promptly.

In a furniture factory, an employee placed some polishing rags in an uncovered metal container. They ignited spontaneously, sprinklers opened, and employees had to use a hose stream to completely extinguish the fire, which damaged crated furniture to the extent of more than $12,000. At another plant, oily mops in a small, unsprinklered wooden closet ignited spontaneously, and the fire damaged material stored nearby to the extent of $7,700. Similarly, oily rags left in a waste can in a piano factory ignited and caused a loss of $1,800. A tannery had a $2,400 fire as a result of the spontaneous ignition of linseed oil scrapings in a bale of sheepskin clippings.

Fires of this kind, due to the improper disposal of waste materials, were responsible for more than half of the spontaneous ignition losses. They involved oily rags, painters' cloths, rubbish, oily mops, and greasy clothing hung in lockers, relatively small quantities of which are sufficient to produce spontaneous heating and eventually ignition.

### Animal or Vegetable Oils Start Trouble

The primary cause of heating is usually the presence of animal or vegetable oils. Linseed oil is typical and introduces a dangerous potential fire hazard when present on such materials as textile fibers, sawdust, or lampblack, which expose a relatively large surface area to the oxidizing action of the atmosphere. Most lubricating oils are



**Impregnating Kettles and Spontaneous Ignition**

A number of explosions of impregnating kettles have occurred due to spontaneous ignition of the carbonized residue above the liquid level, and in some cases to the use of thinners which ignite spontaneously at relatively low temperatures and pressures.

**Piling Coal to Prevent Spontaneous Ignition**

Bituminous coal piled in 3-foot layers and leveled and compacted by tractor and road drag as a safeguard against spontaneous heating.

**Testing for Liability to Spontaneous Ignition**

mineral oils and therefore non-hazardous at ordinary temperatures, but because of the difficulty of distinguishing between animal, vegetable, mineral oils, and their mixtures, all oily waste material should be regarded as dangerous. Deposit it in approved metal waste cans, with self-closing covers, and remove it from manufacturing buildings at the close of each working day.

A second type of spontaneous-ignition fire occurs in exhaust ducts, ventilating systems, spray booths, and other places where combustible residues collect, particularly where, under abnormal atmospheric or operating conditions, the temperature of the duct is increased and so accelerates spontaneous heating. When wood dust, lint, or similar organic material collects on steam pipes in dryers, a slow carbonization takes place until finally the material ignites spontaneously below its ordinary ignition temperature. The remedy for fires of this kind is frequent cleaning.

### Fires Due to Manufacturing Processes

A third type of spontaneous ignition involves materials in the process of manufacture. One fire in reclaimed rubber shavings in bags and in bulk spread rapidly, involved wood platforms, sheds, and window sash of a manufacturing building, and caused a loss of $18,000. The drying of reclaimed rubber involves the possibility of spontaneous heating, since some oxidizing oils such as cottonseed or rosin oil may still remain after devulcanizing and washing.

### Explosion Merely Spontaneous Ignition

Evidence indicates that several explosions of impregnating kettles have been due to spontaneous ignition. The use of a compound subject to ignition at elevated temperatures and pressures is of course undesirable. The residue which collects on the sides of the tank above the liquid level may slowly carbonize and finally reach a condition where spontaneous ignition can occur, resulting in a serious explosion. The remedy is to clean the interior of impregnating tanks frequently enough to prevent any considerable accumulation of deposit, and for maximum safety, to avoid the use of compressed air in the tanks.

The spontaneous ignition of pyroxylin plastic is somewhat different from that of other materials, as it occurs not as a result of oxidation, but from the heat produced by the intensely rapid decomposition of this material. Keeping pyroxylin away from sources of heat will prevent such decomposition and ignition.

Tanneries and leather-working plants are also subject to spontaneous ignition fires. Oils used for leather dressing frequently oxidize, and freshly dressed leather left in a warm place may oxidize enough to become worthless or even to ignite. Fires in sheepskins are due largely to chemical action of materials used in tanning

**Showing the Decomposition of Celluloid**

Left, decomposition in rapid progress. Center, instant of spontaneous ignition. Right, burning after spontaneous ignition. When heated sufficiently, celluloid starts to decompose with great rapidity, until the temperature increases to the point where spontaneous ignition occurs.

**Bales Waste Paper**

Ruins of a typical fire in high-piled baled waste paper, caused by spontaneous ignition of oily materials in the baled paper.

and finishing. Spontaneous heating in a rolled bundle of sheepskins which had been treated with wool grease caused a fire and a loss of $8,500 in a midwestern glove factory. At another plant a fire started from the spontaneous ignition of some bags of cloth and leather scrap, floor leakage adding considerably to the loss which exceeded $40,000.

In mills where oil is added to wool before spinning, as in the preparation of shoddy, the piling of oil-treated goods where ventilation is inadequate may result in spontaneous heating. Excessive moisture is favorable to heating and promotes fermentation in the wool, with the result that fibers are broken down and charring may take place.

### Rapid Oxidation of Dyes

In textile plants where oxiding agents are used in connection with dyeing fabrics, there is a fire hazard due to rapid oxidation of aniline dyes. Fires in dyed textile fabrics usually occur in material that has been put through a dryer without being thoroughly washed. When these goods, warm from the dryer, are left in piles, conditions are favorable for rapid oxidation. One such fire in cotton cloth, from which the excess dye had not been properly washed out, burrowed into the bales and resulted in a loss of over $6,000. At another plant, cotton cloth treated with aniline oil and other chemicals ignited spontaneously while being run through aging boxes and caused a loss of $3,700.

A fourth type of spontaneous-ignition fire occurs in storages of baled materials such as rags, cotton cloth or waste, burlap, and waste paper, and is due to the presence of oily material which, confined in the bale, develops enough heat to start ignition. One such fire in baled unwashed rags could not be reached by water from sprinklers because of the high piling, and a loss of more than $67,000 resulted. Another was caused by oily material in a bale in the bottom tier of a high-piled storage of cotton linters, and resulted in a loss of $16,000. Similar fires in storages of the lower grades of waste paper are fairly frequent.

Spontaneous heating and ignition also take place in large storage piles of bituminous coal. Forty-eight fires in coal piles during the 6-year period caused losses totalling nearly $25,000, exclusive of the loss of the coal, which is not covered in Factory Mutual policies. An effective method of storing coal so as to prevent spontaneous heating is to spread it in successive 3-foot layers, packing it firmly so as to eliminate air spaces as far as possible. This method has been successfully used by a number of large concerns.

**A Linoleum Factory Once Stood Here**

Fire, which destroyed this linoleum plant, started from spontaneous heating in freshly made floor covering in a drying room.

### Some Material Immune

Not all spontaneous heating causes fires. Materials such as jute, hemp, and sisal when wet will heat spontaneously, but seldom reach the ignition point. Such heating results in serious damage, however, and may cause a total loss of the material.

To prevent fires of this kind, it is important to know to what extent spontaneous ignition may occur in the materials involved. The Factory Mutual Laboratories have made hundreds of spontaneous-ignition tests of materials commonly used in industry and are continually testing new materials of unknown hazard as they are introduced. Armed with such knowledge, it is then important to exercise the necessary precautions in storing and handling materials subject to spontaneous heating, and in this way most of the fires from this cause can be eliminated.

## Fire School Held at Purdue University

Sixty-eight cities and 538 persons were represented at second annual Indiana Fire School held at Purdue University, Lafayette, Ind., October 29-30. The school was held under the direction of the Engineering Extension Department of the university, with the cooperation of the Indiana Firemen's Association, Northern Indiana Industrial and Volunteer Firemen's Association, Indiana Fire Marshal's Department, and the Indiana Inspection Bureau.

The instructors and lecturers at the school included:

Donald F. Stiver, Director, Department of Public Safety of Indiana; E. M. Sellers, Manager, Indiana Inspection Bureau, Indianapolis; Frank H. Miller, President, Indiana Firemen's Association, Terre Haute; H. C. Williams, Fire Drill Master, Cincinnati; C. S. Sprague, Research Assistant, Engineering Experiment Station, Purdue University; Harry Wolff, Division of Fire Instruction, Chicago; J. W. Just, Engineer, Western Actuarial Bureau, Chicago; G. A. Gray, City Testing Laboratory, University of Cincinnati, Cincinnati; H. G. Lee, Assistant Manager, Mutual Fire Prevention Bureau, Chicago; A. Bruce Bielaski, National Board of Fire Underwriters, New York; Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, Chicago; Frank Brain, Master Mechanic, Indianapolis Fire Department; J. B. Fleming, Mine Safety Appliance Company, Urbana, Ill.

In addition to the lectures, the students were given practical instruction in first aid, shepherd hook drill and ladder evolutions.

## Charlotte Seeks Fireworks Violators

Members of the Charlotte, N. C., Fire Department will make a canvass of the city for stored fireworks, and anyone found possessing explosives or fireworks of any description will be subpoenaed for violation of the city ordinance forbidding such possession, says Fire Chief Hendrix Palmer. The department has been informed that fireworks are being stored in Charlotte in anticipation of Christmas trade.

"It is natural to assume," Chief Palmer said, "that we cannot go to every possible place where fireworks might be kept. We are, however, going to make regular inspection tours and bring charges against those persons possessing firecrackers or explosives."

D. G. SPENCER.

# PROMOTIONAL STUDY COURSE

**Herein is presented a series of definitions, questions and answers, designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.**

## Definitions

Apartment House: A building intended or designed for, or used as, the home or residence of 3 or more families or households, living independently of each other, and in which every such family or household has provided for it a kitchen set, bathtub and water closet, separate and apart from any other.

Frame Building: A building or structure of which the exterior walls or a portion thereof are constructed of wood. Buildings sheathed with boards, and partially or entirely covered with 4-inches of brickwork, are deemed to be frame buildings. Wood frames covered with metal are deemed to be wood structures.

Reinforced Concrete: Concrete to which has been added steel, bars of various shapes and sizes to give greater strength.

Stud: A supporting post to which are nailed the laths in erecting a partition. When several studs are together they are known as "studding."

Furring: Furring (or furring strips) are thin strips of wood used to make a level surface on which lathing, etc., is to be nailed.

Scuttle: A square hole in a roof with a movable cover.

Chimney Breast: The face or front of the chimney and resting on the hearth.

## Questions

**(To be answered in next issue)**

1. How would you locate the building on the next street directly behind a building on fire?
2. When, at a fire in a high building, should the department refrain from using elevators for getting men and lines in operation on the fire?
3. When you find a floor dangerously overweighted with water after a fire, what would you, as officer in charge, do?
4. Where there are no fire escapes on the front of a building and it is desired to open up one or more of the windows above the street level for ventilation, how would you accomplish this?
5. What danger is there in connection with gasoline getting into sewers from the drains in garages?

## False and True Questions

**(Is each statement false or true? Answers in next issue)**

6. T F—Fire streams may be defective if excess nozzle pressure is employed.
7. T F—By "flash point" is meant the highest temperature at which an inflammable liquid gives off combustible vapors.
8. T F—Carbon tetrachloride extinguishers are effective for extinguishing small fires involving calcium carbide.
9. T F—By "fire retardent" is meant a substance or device which will permanently check progress of fire.
10. T F—Fundamental causes of electric fires are arcing and overheating of conductors, due to overload, etc.
11. T F—Chafing is a common cause of injury to fire hose in service.
12. T F—The section of hose adjacent to the engine is the one most likely to be injured by chafing.
13. T F—When overhauling, it is best practice to move heavy objects to the center of the floor rather than toward the walls.
14. T F—At a fire where large quantities of inflammable oils in tight containers are subject to the heat of fire exposure, quantities of water should be used to keep them cool.
15. T F—Where baled rags, cotton, and similar materials are stored on floors in a building in which fire is burning, the building should be thoroughly ventilated and as little water as possible used in extinguishing fire in these materials.
16. T F—The prime object of a fire alarm signaling system is to transmit an alarm of fire to the fire fighting forces as quickly as possible after a fire is known to exist.
17. T F—Burning embers may carry fire as far as two miles from their point of origin.
18. T F—Direction of wind is of no concern when ventilating operations are being performed.
19. T F—The lower the pressure in a water main at the end from which it receives its supply, the shorter the distance that water can be forced through it.

## Completion Statements

**(Missing word or words to be filled in)**

20. Foam thrown on burning oil ..... the fire.
21. Water in moderate quantities thrown on sulphuric acid causes ..... of the acid.
22. When water is thrown on a fire in an open oil tank it ..... and does not extinguish the fire.
23. Fires are possible in "fire-proof" building due to the presence of ..... in the building.
24. The temperature at which a material begins to burn is called its .....
25. In a building where grain is milled there is danger of a .....
26. Grass fires burn more ..... down hill than up.
27. The valve mechanism of most fire hydrants is in that portion of the hydrant ..... the ground.

## Answers to Questions in Previous Issue

1. (a) 7½ threads per inch; (b) 6 threads per inch; (c) 6 threads per inch.

2. Scaling ladder and life net.

3. Follow the hose line out.

4. By wrapping the end of his coat, or any other piece of cloth, around the rope to protect his hands.

5. First get in touch with plant superintendent or other responsible plant official, to determine details on the works, such as private apparatus available, location of draw-off pipe lines, pumps, valves, etc. Use plant equipment such as foam system, steam boilers, etc., to extinguish the fire. Drain off oil from exposed tanks to other tanks at a safe distance if possible. If department has portable foam equipment (i.e. foam generators) put in service to smother fire in burning tanks, if they can be reached. Use water streams on the burning tanks and stills, as well as exposed tanks and stills, to keep the temperature of the oil down. No attempt should be made to extinguish the fire by throwing streams directly into open tanks. If streams are so used, the water will sink to the bottom of the tank and the oil may overflow, spreading the fire. Furthermore, boilovers will take place as soon as the fire nears the water in the bottom of the tank. Damage instead of good may result, therefore, by using streams into open tanks which are afire. Should no foam be available, steam boilers or other oil fire fighting equipment be available, then the only thing to do is to drain the oil off from the burning tanks, and stills, provided bypasses and sufficient storage capacity are available. In this case, while the department keeps streams playing on the burning tanks and surrounding tanks and stills to cool them off, dykes, if they are present, should be inspected to make sure they are in shape.

6. True; 7. True; 8. False; 9. True; 10. True; 11. True; 12. False; 13. False; 14. False; 15. True; 16. True; 17. True; 18. False; 19. False; 20. False; 21. True; 22. False.

23. . . . with permission from the head of the department;

24. . . . alcohol and carbon bisulphide;

25. . . . materials absorb water and may overload floors . . . and . . . they expand upon soaking up water and may cause structural damages. (Editor's Note: In the question as given the word "wood" should be "wool.")

26. . . . hydrochloric acid.

27. . . . acetic acid and ammonium nitrate.

## Questions with Answers

*Question*: State what effect the following extinguishing agents have on fires and indicate for what class of fire and kind of industry each is best adapted.

(A) Steam jets.
(B) Carbon tetrachloride extinguisher.
(C) Wet burlap bags.
(D) Foam fire extinguishers.
(E) Sawdust and bicarbonate of soda.

*Answer*: (A) Steam jets produce primarily a smothering effect on fires by surrounding the burning materials with steam, which does not support combustion. They produce a secondary effect by cooling, as well as a slight quenching effect. The temperature of steam, when under atmospheric pressure, is approximately 212 degrees Fahrenheit, which is well below the ignition point of most combustible substances. Steam can only be applied with effect when the fire is in a confined space, and where it can be completely enveloped by steam. Steam is employed largely in marine fires and in oils and similar industries where it can be produced in quantity and applied to confined spaces.

(B) Carbon tetrachloride extinguishers extinguish fires largely by smothering. There is also a slight cooling effect. It is the carbon tetrachloride vapor that produces the chief extinguishing effect, and to secure greatest effectiveness, the jet from the extinguisher is directed on the burning materials, the heat of which vaporizes the carbon tetrachloride. The vapor does not support combustion. This type of extinguisher is effective on fires in small quantities of flammable liquids, greases, etc., and on small fires in electrical equipment. They are also used on automobile and motor boat fires, as well as on small fires in ordinary combustible materials. They might be classed as the best extinguisher for the electrical industry, although the carbon dioxide gas extinguisher is gaining in favor.

(C) Wet burlap bags extinguish fires principally by smothering. They also produce, however, a slight cooling effect. Where they are used, as they occasionally are, for beating out small fires, they produce the result largely by the smothering process. They are employed chiefly for extinguishing oil or similar fires of small proportions whether such oils are in small containers or are on the level surfaces of small area, such as on floors. Hence they are suitable for such industries as lacquering, painting, etc., on a small scale.

(D) Foam fire extinguishers extinguish fires principally by smothering, although they also produce a slight cooling effect. They are especially effective on fires in inflammable liquids, where the foam floats on the top effectively sealing the surface of the liquid and thereby smothering the fire. They are also effective, though to a lesser degree, on fires in ordinary combustible materials. They are most suitable for the oil industry, and find almost equally effective employment in painting, varnishing, lacquering and similar fields.

(E) A mixture of sawdust and bicarbonate of soda produces extinguishing effect on fires by smothering. This mixture is effective in small quantities of heavy flammable liquids, greases, etc., in vats or other open vessels or on floors, where the mixture is applied rapidly and is spread over the entire surface, provided it may be retained as a blanket on the burning material. It is of use in such industries as employ comparatively small quantities of such liquids.

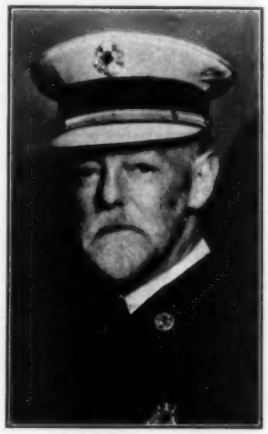
*(To be continued)*

**Two Instructors of the Indiana Regional Fire Schools**

From left to right, the fire school instructors are John J. O'Brien and Emmett T. Cox. Chief O'Brien served forty-four years with the Indianapolis Fire Department and Chief Cox served eleven years with the Sullivan, Ind., Fire Department.

## W. E. Parker Honored by Chiefs

William E. Parker, Chief of Fire Department, Monterey, Cal., observed his forty-fifth anniversary as head of the department. He was recently tendered a dinner by more than two hundred of his friends.



**Chief William E. Parker**

At the dinner were Mrs. Mary Parker King, mother of the Chief; Lee and Ralph Parker, his sons; a number of city officials; Mike Lynch, Ottis Mantor and Grant Towle, all of Monterey, charter members of the department with Chief Parker, and Henry Friedman, Burlingame, another charter member.

A group of treasured gifts presented to him during his long career were on display at the fire house. The items included a badge presented to him in 1915, on his twenty-fifth anniversary as Chief, and a gold watch which he received in September, 1924, for his work in fighting an oil fire. In 1926, members of the deparement gave him an automobile roadster for his personal use, in connection with his department work.

Chief Parker is the first Chief of Monterey and he has held that post without interruption ever since.

## Plan for Rural Fire Protection

Ira D. Goss, of the Agricultural Committee, of the National Fire Waste Council, was in charge of a meeting held at Chicago, October 22, to consider a plan for reducing farm fire losses. The meeting was attended by representatives of telephone companies, fire insurance underwriters and fire apparatus manufacturing interests, and the U. S. Department of Agriculture.

The plan calls for a three-point program. It advocated that if a farmer had a telephone, was within seven or eight miles of a fire station and would install a 2,500-gallon storage tank on his place and keep it properly filled, he would receive a ten per cent credit on the fire insurance premium.

Insurance interests did not promise so great a reduction, because of insufficient data on fire losses, the fact that in the winter time roads are frequently impassable, and that water tanks may become frozen. It was suggested that there be a small credit, to be adjusted later as conditions warrant.

On the following day there was a meeting of the Agricultural Committee of the National Fire Waste Council, and the Farm Fire Protection Committee of National Fire Protection Association.

## Walworth County Re-Elects Officers

Dr. C. V. Bachelle, President, and the other officers of the Walworth County, Wis., Fire Officers Association, were re-elected at the annual meeting of the association held at Lake Geneva. The meeting was preceded by a fish supper at Hotel Traver at which ninety persons were present. Chiefs from Richmond and Harvard, Ill. and Burlington and East Troy, Wis., were present as invited quests.

The guests also included: H. J. Mortensen, State Fire Marshal; William A. Greenwald, Deputy Fire Marshal; J. B. Wilkinsen, Engineer, Wisconsin Insurance Rating Bureau, J. B. Stahl, District Marshal, Chicago Fire Department; Capt. Young of the Insurance Patrol, Chicago Fire Department; George P. Stahl, Engineer, Chicago Board of Underwrites; Peter Pirsch, Kenosha, and G. B. Thatcher, of the

### Regional News

New departments added as members are East Troy, Harvard and Elkhorn, bringing the list up to twelve departments affiliated.

The officers re-elected are Dr. C. V. Bachelle, Delavan Lake, President; H. O. Robb, Sharon, Vice-President; C. A. Foster, Lake Geneva, Secretary-Treasurer.

# Gases, Chemicals and Hazardous Materials

## Part III

In this third installment is continued the discussion of chemicals and hazardous materials more commonly encountered in fire fighting. Methods of shipping and handling and their action under exposure to fire are given for most of the materials.

**Fire Attacks a Chlorine Manufacturing Plant**

Prompt response of fire apparatus from a large city prevented a serious explosion when fire broke out in a chemical plant that manufactured chlorine.

**CARBON Tetrachloride Fumes:** While carbon tetrachloride itself is a liquid, the fumes which it throws off when brought in contact with burning materials have the effects of poisonous gases, and hence are classed under this particular heading.

The gases given off by decomposing carbon tetrachloride liquid on wood fires, for example, include carbon dioxide, hydrochloride acid, a trace of phosgene, and where chloroform is used for lowering the freezing point of a solution, chloroform fumes.

Phosgene is a poisonous gas, and is one which was commonly used in World War. Chloroform produces asphyxiation, the seriousness of which depends upon the concentration with which the chloroform fumes are present.

**Chlorine:** Chlorine is a greenish-yellow gas of very pungent odor, and is about two and a half times as heavy as air. It is used in many chemical products and is frequently thrown off by these products when exposed to fire. Thus, even if chlorine is not found in its free state at a fire, it may be present due to action of the fire on other materials into which it enters in the process of manufacture.

It is widely employed in textile and paper bleaching factories. Also in purification of water, synthetic dye manufacture, as a military poison gas, and in many industrial chemicals and explosives. Mixed with hydrogen or acetylene it explodes in the sunlight.

Chlorine in liquid form is shipped in either steel cylinders, ton drums, or tank cars of 15 tons capacity. The cylinders and ton drums are provided with fusible plugs.

Chlorine is a powerful respiratory irritant, and in sufficiently high concentration can cause death by action on the lung tissues. However, in concentrations far below injurious ones, it gives warning of its presence by sight and smell. It is most harmful when inhaled in a confined space in which it is present in high concentration, provoking instant spasm of the glottis, nose, throat and bronchial tubes. When fatal results are produced, death is generally caused by smothering or asphyxiation, that is, by inability to breathe because of edema of the lungs and closure of the bronchial tubes.

The following instructions on handling chlorine may prove of use:

Keep to the windward side of the leak.

If leakage is extensive, promptly warn all persons in the path of the fumes to move to a safer location.

If water is available, use it freely on the escaping liquid. This forms chlorine hydrate instantly, from which the evaporation of gas is slow.

If water is not available, dig a trench to draw off the liquid to a lower spot. The pool formed can then be treated later with water. Loose earth should be thrown on the liquid at once to retard evaporation.

If tanks are punctured above the liquid, only gas will escape, and this will cool off the contents so that leakage will be slow. If leakage is below the liquid level, it will continue until top of liquid reaches the opening and then slow down to a gas leakage.

Leakage in a severe fire should not be serious, as the gas will be carried upward and dissipated with the products of combustion.

In treating a person affected by chlorine gas a manufacturer of this gas recommends the following:

1. Remove at once to open air and away from all gas fumes.

2. Place patient flat on back with head slightly elevated.

3. Give ½ teaspoon essence of peppermint or moderate dose of bromo-seltzer or whiskey.

This will relieve the tendency to cough and soothe the inflamed membrane, allowing a passage of air and promoting the action of respiratory organs.

4. The person affected should resist as much as possible the impulse to cough.

While serious after-effects are not to be expected, a physician should always be called.

**Ethane:** This is a gas commonly used in refrigerating systems, and is a gas with the appearance of water when in liquefied form. The gas itself is slightly heavier than air. It has an odor somewhat like ether. It is shipped in steel cylinders. The hazards of the gas are due to its explosibility when mixed with air in proportions from 3.3 to 10.6 per cent. Its ignition temperature is about 960° F. When cylinders are exposed to fire, they are apt to "let loose," unless kept cool with water streams. Ethane is made by distilling liquefield natural gas. It is considered extremely dangerous from the explosion standpoint.

**Pintsch Gas:** This is a gas made from petroleum, and is compressed and sold in cylinders. The pressure in the cylinders runs from about 150 to 200 pounds per square inch.

It is used for lighting, such as in marine buoys. In the latter use the gas is under a pressure of 1,500 pounds per square inch. The gas has the hazard incidental to high pressure gas in containers, due to the fact that upon heating it the pressure is increased and the cylinder might burst. The gas is highly inflammable and forms explosive mixtures with air.

**Hydrocyanic Acid Gas:** This gas which is usually found in liquefied form is colorless. The gas is lighter than air. It burns in air. It is used as an insecticide and for fumigating purposes. It is exceedingly poisonous and men exposed to it are in extreme danger.

It is, as noted above, hazardous because the gas is explosive when mixed with air, the maximum explosive mixture being one part of gas to five of air.

**Hydrogen:** Hydrogen is a gas which is extremely light; it is colorless, odorless, and tasteless. It weighs about one-sixteenth that of air. It burns with a pale blue flame, producing water with a greater relative heating effect than any other combustible material. The temperature of the flame is about 3,600° F. It is used extensively in hardening of oils and fats, notably soap, edible and cooking fats. It is also used as a compressed gas for oxy-hydrogen cutting and welding in metal work, etc. Balloons are sometimes inflated with it. It is a very inflammable gas with a wide explosive range (9.5 to 66.5 per cent). It is found in steel cylinders under high pressure.

If the hydrogen leaks through a small opening of a cylinder, the temperature of the gas remaining in the cylinder

**Escaping Vapors from a Gasoline Tank in this Apartment House in Berlin Exploded, Taking Nine Lives**

Damage to the building indicates the power of the explosion.

is increased by this process, and ignition or explosion may result. It is not poisonous to inhale.

**Hydrogen Sulphide:** This is a gas often present in various industrial plants as well as in mines and tunnels, and is an extremely poisonous gas. Acute poisoning of men can be produced by low concentration of this gas, and may result in respiratory paralysis followed by heart failure and death.

It is encountered in various stages of the manufacture of sulphuric acid, and in the distillation of petroleum, particularly those oils known as high-sulphur crudes; also about some gas wells, gas plants and smelters. It is a colorless gas, which, in low concentration, has the distinct odor of decayed eggs and in mines has been termed "stink damp." It burns with a bluish flame, forming sulphur dioxide and water. In seven parts of air a mixture is formed which when ignited explodes with violence. Wherever hydrogen sulphide exists, the possibility of poisoning is present. Its toxicity is comparable to hydrocyanic acid gas (prussic acid).

When asphyxia from this gas is complete it results in almost immediate unconsciousness, and frequently death follows before rescue can be accomplished or even attempted. In case where rescue can be accomplished the victim recovers almost immediately.

Hydrogen sulphide in low concentration produces symptons of headaches, sleeplessness, dullness, dizziness and weariness. Pains in the eyes, followed by conjunctivitis is fairly constant. Further poisoning produces depression, stupor, unconsciousness and death. Treatment of acute cases consists in immediate removal from exposure to the gas and the immediate administration of artificial respiration. The breathing of oxygen is advisable when possible.

Where hydrogen sulphide gas may exist, good ventilation results in a decrease in the number of accidents. The canister type of mask, hose mask, and oxygen breathing apparatus are of value in protecting the men in case of emergency.

In operating at fires where hydrogen sulphide is encountered, the first precaution is to provide thorough ventilation of the structure. It is heavier than air, and where ventilation is being provided for the gas only, with no presence of fire, ventilation should be provided at low points in the building. On the other hand, where fire is burning, ordinary ventilation starting at the top of the building first is satisfactory.

**Illuminating Gas:** By illuminating gas is meant gas used for lighting. But it is not usually confined to lighting only, for illuminating gas is also used for domestic and industrial heating. It is usually composed of carbon, hydrogen, oxygen and nitrogen, varying in different quantities and for different qualities of gas. Carbon monoxide is one of the chief constituents of illuminating gas as commonly furnished at the present time. This accounts for much of the toxic effect of illuminating gas.

**Methane (Marsh Gas or Fire Damp):** This is an odorless, colorless gas about one-half as heavy as air. It is explosive when mixed with air in proportions of five to sixteen per cent. It burns in air with a hot but non-luminous flame. It is present in coal gas, of which it makes up thirty to fifty per cent by volume.

It is used as a base for preparations of commercial grades of chlorine compounds, such as chloroform, carbon tetrachloride, methyl and methylene chloride, by reaction with chlorine gas, also in the manufacture of coal gas. It is usually shipped in steel cylinders. For ventilating the rooms in which the gas is found, ventilation is provided at the top either in the case of fire burning or where no fire is burning. Of course, when ventilating by opening the roof, scuttle, etc., the building should be opened at lower points also to provide access for fresh air.

**Oxygen:** Oxygen is a colorless, tasteless gas and when liquified produces a slightly bluish liquid. It weighs more than air. It is shipped in steel drums, cylinders or "gas bottle." With hydrogen or acetylene it is used for the production of exceedingly hot flames for cutting and welding metals, including platinum. It is also used for resuscitation in asphyxia and stimulation in various diseases. It is occasionally used in combustion to promote better utilization of fuel.

While it is non-explosive, it presents a danger because it intensifies practically all fires. Even steel will burn in the presence of oxygen.

It may be found in establishments where oxy-acetylene welding is done, as well as in laboratories, hospitals, etc. It is non-poisonous and hence constitutes no danger from this angle to men operating at a fire where cylinders of oxygen are present. On the other hand, there is always a possibility of the oxygen cylinder under high pressure bursting due to increased pressure on exposure to heat.

**Ethyl Chloride:** This is a flammable and easily liquefiable gas, and is employed in store and household refrigerating systems. Except for its flammability, it presents favorable features for use in small installations. Even though the amount contained in a system is small, some rather serious accidents have occurred due to the ignition of the escaped gas. This gas, when mixed with proper proportions of air, is explosive.

**Methyl Chloride:** This gas is very similar to ethyl chloride, in that it is easily liquefiable and is highly inflammable. Mixtures in certain proportions with air are explosive. While it is less hazardous than gasoline, it nevertheless is dangerous when free in the air and in the presence of open flame.

As with ethyl chloride the hazard comes when the material escapes from its container.

**The Mix Up That Followed Blast of 400 Barrels of Chemicals**

Four hundred barrels containing camphor, sassafras, saffrol and eucalyptus extracts exploded at a plant at Bayonne, N. J. The photograph shows the wreckage that followed.

*(To be continued)*

# THE ROUND TABLE

## For Practical Discussion of Current Fire Department and Fire Management Problems

## FIRES CAUSED BY OILY WASTE AND OILY RAGS

MUCH has been written about the spontaneous ignition of oily rags, or more correctly, the rapid oxidation of such material.

Certain oils, such as linseed oil, have the property of oxidizing very rapidly when left exposed to the air and at a point free from air currents. The heat which is generated because of this chemical process is cumulative, and a point is soon reached, where the heat is sufficient to cause the waste to break out into flame.

To prevent this, many cities have regulations which require such oily waste to be stored in covered metal cans of special design, and that the contents be removed and burned each night.

The problem in full that is discussed in this issue, appears in the box on this page. In the box on the following page is the question that will be treated in the next issue. Should you have comments you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 West 40th Street, New York, N. Y.

### Discussion of the Question

**B. L. Warlick, Chief, Jackson, Tenn.:** We have had fires directly attributed to oily waste or oily rags. We require that its storage be in metal cans or containers. This regulation has proven effective.

**Earl A. Traeger, Chief, Minneapolis, Minn.:** For the year 1934 we had fifteen fires directly caused, in our estimation, by spontaneous ignition of oily rags, paint rags, etc. The loss from these fires was: To buildings, $3,424; to contents, $1,788; total $5,212.

We have no specific ordinance governing the storage or handling of such materials, but we do regulate storage and handling through Section 4 of our Fire Prevention Bureau ordinance. We insist that all occupancies using oils and paints, such as garages, painting establishments, etc., deposit such rags in metal containers with self-closing tops; but, as we are not allowed by law to inspect private dwellings at the present time, we are unable to control the storage and handling of paint rags or oily rags in these places.

It is my belief that the regulations we insist upon with reference to oily rags and paint rags have undoubtedly been responsible in the reduction of fires which might have been caused through spontaneous ignition of these materials.

**Chas. E. Schrom, Chief, Washington, D. C.:** We have experienced several fires which were directly attributed to spontaneous ignition of oily rags; however, all of these fires have been in rags containing vegetable oils, such as paint rags, polishing cloths, etc.

The regulations prescribe that suitable metal cans with covers shall be provided in paint shops, garages, etc., for the disposal of these discarded rags.

We believe that these regulations have been generally effective and such fires which have occurred from this cause came about when oily rags were left lying on window sills, steam radiators, etc., and not placed in proper closed receptacles.

**Paul P. Heinz, Fire Marshal, New Haven, Conn.:** We have had several fires from oily waste that was carelessly thrown in vicinity of grinding wheels in shops, and were ignited from sparks thrown from the wheel. We have eliminated this hazard by requiring the factory superintendent to provide metal containers with covers in which to dispose the waste. The workmen are instructed regarding that rule.

I recall one instance where oily waste kept in metal containers ignited by spontaneous combustion during an extremely hot spell of weather, due possibly to the failure of shop men to empty the containers in a reasonable length of time.

As shops and factories in this city are working only part time, we have had very few cases of fires of the above type, in the past three years.

**Wm. Briggs, Chief, Shelbyville, Ind.:** The use of metal containers which must be emptied at least once a day and also which must be set out at night, has aided in reducing fires caused by the storage of oily rags and waste.

**W. J. Lutz, Chief, Wilmington, Del.:** Some time ago we did have a few fires start from oily waste and rags, but none in late years, as the new city ordinance has had a tendency of making people comply with the regulations. The ordinance was passed in June, 1924.

The ordinance regulates the storage, use, manufacture, sales, handling and transportation or other disposition of inflammable materials and rubbish, such as explosives pyrotechnics, inflammable motion picture films, and pyroxlyline plastics. This ordinance also regulates dry cleaning establishments, garages, fire exits, fire extinguishers, oil burners, etc.

The ordinance has been very effective and good results have been obtained in our city.

**J. N. Sullivan, Chief, Utica, N. Y.:** We frequently answer alarms for fires attributed to oily rags or waste. This is especially true where repairs and improvements are in progress where oily rags are carelessly discarded.

Our fire prevention regulations require that a metal can be provided having legs and close fitting cover for such rags and waste. We find that this amply takes care of all hazards where rags and waste are in every day use. Our regulations have given satisfactory protection.

**C. M. Johnson, Chief, Knoxville, Tenn.:** We have had numerous fires which were attributed to this cause. We have an ordinance governing all fire hazards. It provides where oily waste and rags are used, same must be kept in metal can, with self closing lid, and can must be perforated around bottom, and rest on legs.

This method has been found to be very effective, and in fact we have never had a fire where these provisions were carried out.

**G. E. Graves, Division Marshal in Charge of Fire Prevention, Chicago, Ill.:** Many fires are attributed directly to oily rags and waste. In statistics gathered by the Bureau of Fire Prevention, such fires are listed as spontaneous.

### HERE IS THE PROBLEM

Have you ever had fires directly attributed to oily waste or oily rags?

Have you any fire prevention regulations governing the storage of such materials?

What do such regulations require?

Have they proven effective?

The Chicago Code of 1931 contains the following sections:

"Section 2565: There shall be no direct connection between any waste basin sink, floor drain or washrack and house drainage or sewer system in buildings where there are housed or kept five or more vehicles containing volatile inflammable liquids in tanks thereof. All such drains or waste mains to sewer system shall have intercepting grease, oil and inflammable liquid traps or separators approved by the Division Marshal in Charge of Fire Prevention, which shall completely separate such substance from water and sewage and allow their safe and convenient removal. Such traps or separators shall be cleaned once every two months or more, if necessary."

"Section 2665: Oily rags and waste shall be kept during the day in standard waste cans of heavy galvanized iron, having four-inch metal legs and self-closing covers and shall be removed from building each night."

Conclusive evidence of such fires is difficult to produce as many fires in safety cans burn themselves out or are extinguished by the occupant without the aid of the Fire Department.

**Luther P. Willis, Chief, Pueblo, Col.:** We have had quite a few fires that we are of the opinion were caused from oil rags.

Our regulations require that all oily rags, or waste to be placed in a metal container with a self-closing lid, and the container stand on metal legs to prevent bottom of container burning floor should a fire occur in the container.

Wherever we have been able to convince the people that this container has proven itself a safety device, it has been successful.

**Wm. L. Ryan, Chief, Dubuque, Iowa.:** We have had a few fires that were directly traceable to oily rags and waste. Some were used by painters to remove filler, turpentine and other vegetable oils from floors, etc. In each case the rags and waste were stored in combustable containers where ventilation was poor.

We have a city ordinance requiring that such materials be stored in metal containers with self-closing lids, mounted on metal legs so that bottom of can will be at least six inches above floor.

These regulations have proven very effective in the business district where our inspectors make their regular inspections.

**Alex W. Dotson, Chief, Elkhart, Ind.:** Yes, we have had fires directly attributed to oil rags and waste.

The ordinance herewith gives in detail the regulations governing oil rags and waste.

"SECTION 1. It shall be the duty of the Chief of the Fire Department to inspect or cause to be inspected by Fire Department officers or members, as often as may be necessary, but not less than twice a year in outlaying districts and four times a year in the closely built portions of the City all buildings, premises and public thoroughfares, except the interiors of private dwellings, for the purpose of ascertaining and causing to be corrected, any conditions liable to cause fire, or any violation of the provisions or intent of an ordinance of the City affecting the fire hazard. And for the purpose of making such inspections the Chief of the Fire Department or any member thereof is hereby impowered and authorized at any and all reasonable times to enter upon and into any of the aforesaid buildings and premises, except private dwellings.

"Whenever the Chief of the Fire Department or any officer or member thereof shall find any building or other structure which for want of repairs or by reason of age or dilapidated condition or for any other cause, is especially liable to fire, and which is so situated as to endanger other property, and whenever any officer or member shall find in any building or upon any premises or other place, combustible or explosive matter or dangerous accumulations of rubbish or of unnecessary accumulations of waste paper, boxes, shavings or any other highly inflammable materials, especially liable to fire, and which is so situated as to endanger property, or shall find obstructions to or on fire-escapes, stairs, passageways, doors, windows, etc., liable to interfere with the operations of the Fire Department, or egress of occupants, in case of fire, he or they shall order the same to be removed or remedied and such order shall forthwith be complied with by the owner or occupant of such premises or buildings, subject to appeal within twenty-four hours to the Mayor, who shall within ten days review such order and file his decision thereon, and unless the order is revoked or modified it shall remain in full force and be obeyed by such owner or occupant.

"Any owner or occupant failing to comply with such order within ten days after said appeal shall have been determined, or, if no appeal is taken, then within ten days after the service of the said order, shall be liable to a penalty as hereinafter stated.

## HERE IS THE PROBLEM FOR THE NEXT ISSUE

What special measures do you take to protect guests in non-fireproof hotel buildings against fire?

Do you find such buildings hazardous, as a rule?

If so, in what way?

What means do you employ for forcing compliance with recommended safety measures?

Have they proven effective?

"SECTION 2. The service of any such order shall be made upon the occupant of the premises to whom it is directed by either delivering a true copy of same to such occupant personally or by delivering the same to and leaving it with any person in charge of the premises, or in case no such person is found upon the premises by affixing a copy thereof in a conspicuous place on the door to the entrance of the said premises; whenever it may be necessary to serve such an order upon the owner of premises, such order may be served either by delivering to and leaving with the said person a true copy of the said order, or, if such owner is absent from the jurisdiction of the officer making the order, by mailing such copy to the owner's last known post-office address.

"SECTION 3. Any person or persons, firm or corporation who shall fail or neglect to discharge the duties imposed by this ordinance and the orders of of the Chief of the Fire Department, or any member thereof detailed by the Chief for making inspections, on conviction thereof shall be fined not less than ten dollars or not more than one hundred dollars for each day of failure or neglect.

"SECTION 4. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

"SECTION 5. This ordinance shall be in full force and effect from and after its passage, approval and publication according to law."

This ordinance has proven satisfactory when we have to "crack down" on violators.

**John J. McElligott, Fire Chief and Commissioner, New York City.:** The regulations regarding the storage of oil waste or oily rags are that they be kept in self-closing metal waste cans in certain premises, such as garages, oil selling stations, motor vehicle repair shops, etc., and such cans must be provided on these premises before the permit is issued by this department.

These regulations have proven very satisfactory for, where these cans are provided in the premises mentioned, very few fires originate due to any accumulation of oil, rags and waste and, if so, they are confined to the metal container.

**Henry A. Fox, Chief, Boston, Mass.:** We have had fires directly attributed to the storage of oil waste and oily rags. The following regulations are enforced in Boston: In paint shops, waste to be kept in covered metal receptacle, elevated above floor and emptied after every day's business.

Garages shall be provided with a sufficient number of self-closing metal receptacles in which all combustible waste material shall be kept until removed from the building. All mercantile plants using vegetable oils required to keep rags, waste, etc., in metal containers with cover, container to be elevated above floor. This has proven very effective.

**G. L. Mathews, Chief, Pocatello, Idaho:** Oily floor rags thrown in the corner of a furnace room have been known to cause fire. In one particular case such rags were left in a furnace room, which was kept locked and no one had entered it for some time before the fire occurred. We have found that oil rags on floors ignite in a very short time due to sun rays through windows. In one instance some painters left oily rags and they were ignited by the heat from the sun.

We require that oil waste and rags be kept in metal containers and away from heat. This regulation has been effective in many cases.

**Irby Klirck, Chief, Memphis, Tenn.:** We have had one fire where a female employee placed an oily rag between wall and pipe. This rag contained linseed oil to polish floors and it ignited, causing a fire.

We have states regulations that when such material is not in use it should be placed in metal safety containers.

Results are fair. We have had very few fires from this condition. Most of those we do have are in furniture store repair shops and automobile paint shops. In these shops we find universal disregard for this hazard and much trouble is encountered. Containers are provided in most all of these cases.

**Clyde Scott, Chief, Provo, Utah:** We have had fires which we have attributed to oily rags. We have, however, no regulations as to their storage.

**Thomas M. Lane, Chief, Alameda, Cal.:** We have had such fires. Our regulations for fires of this sort are: That

all waste, rags or substances liable to cause fire by spontaneous combustion must be stored in containers of incombustible material and must have a clear air space of not less than two inches below the bottom. These laws have proven satisfactory.

**D. J. Rayburn, Chief, Eldorado, Kan.:** Yes, we have had several fires in the last fifteen years attributed to oil mops or rags. There is no ordinance covering oil waste or oiled rags in Eldorado.

**S. J. Flores, Chief, Shreveport, La.:** I think paint and oily rags are very dangerous. Painters' overalls and oily rags have caused several fires in our City. All places using oily rags, etc., must keep them stored in fireproof cans. This has proven effective.

**Edward T. Rose, Chief, Wheeling, W. Va.:** We have had several fires caused by painters' rags, where linseed and turpentine have been used. I remember a fire caused by oil soaked rags around a garage or machine shop where only mineral oil is used.

We require all oily rags to be kept in metal containers with a metal lid.

**V. E. Pierret, Fire Prevention Engr., Los Angeles, Cal.:** We have had fires caused by ignition of oily rags and oily waste. Our ordinance No. 72,700, Section 19 pertaining to these fires reads as follows:

"It shall be unlawful for any person firm or corporation to keep or cause or permit to be kept, any waste rags, paper or other substance likely by spontaneous ignition, or otherwise, to cause fire, except in a separate non-combustible container, with a tight fitting metal cover, or an approved self-closing cover."

This ruling has given satisfactory results.

* * *

## ANSWERS TO PREVIOUS QUESTION

*The following replies are in answer to a previous question on the recretational equipment, if any, provided for the members of the Fire Department:*

**C. G. Hamel, Vice-Pres., Manhasset-Lakeville Fire Dept., Manhasset, L. I.:** The Manhasset-Lakeville Fire Department houses its apparatus in four company fire houses, located in different sections of its fire district. There are approximately between thirty and fifty men connected with each fire house. Each fire house has a pool table, card tables and a radio, all of which were purchased by the firemen themselves. One of the fire houses also has its basement fitted up with two ping pong tables, a shuffle board game, and a pistol range. These were also paid for by the firemen.

Funds for purchasing this type of recreational equipment are raised by the individual fire companies through card parties, dances, etc.

The Fire Department benefits by usually having groups of men congregate at the fire houses in their spare time thus creating good fellowship and facilitating a prompt answer to a fire call.

**H. L. Beegle, Chief, Scottdale, Pa.:** We do not have any recreational equipment as mentioned in your question. Our station was built in the hand drawn apparatus era and there was no extra room space allowed that we could use for such equipment.

I would favor at least some of the equipment for I believe it would prove beneficial to a volunteer fire Department. It would be an attraction to bring the members to the fire stations.

**Julius Marker, Chief, Idaho Falls, Idaho:** We have boxing gloves, a punching bag, pool table, and card tables in our department.

The department purchases the equipment, through benefit dances and donations.

In my opinion recreational equipment keeps the men in better spirits. It helps to keep our call men around the station, and it also keeps the men in better physical condition.

**Milt K. Herrick, Chief, Alamosa, Col.:** This department has no recreational equipment whatsoever. The little recreation we have as a body consists of a keg of beer and Dutch lunch about once a month and the money for these is obtained by the department itself.

Our department in Alamosa is composed of fifteen volunteers and one paid driver.

**M. Ligouri, Chief, Long Beach, N. Y.:** At the present time we have no billiard tables, etc. We have a large recreation room, but we use that for volunteer firemen who are out of work to sleep and eat in.

The city pays for the expense of running it for the firemen. The recreation we have here is that we get together about once every two months and have a nice time. We tax each man a very small amount for this "get-together."

**L. A. Canfield, Chief, Elmira Heights, N. Y.:** The Elmira Heights Fire Department has, as recreational equipment, two pool tables, a ping-pong table, gymnasium equipment, a branch of the county library, and we also subscribe for all the latest magazines. Besides this, we have a lengthy rummy tournament every year.

The village, along with the Council, maintains this equipment.

These methods of recreation induce the men to stay at the station and when they are idle, the Fire Department is the ideal place to spend a quiet evening. We thereby have men on duty at all times.

**Edward Snyder, Chief, Patchogue, N. Y.:** We have a pool table and some card tables for recreational purposes in our department. Such equipment is purchased by the department.

I believe it is a good practice to have men spend time at the station, and equipment of this sort helps to bring them together. It is helpful, in that when a call for apparatus is received, and only one piece of apparatus and a few men are needed, it saves sending out a general alarm. It also works out very well for ambulance calls.

**H. L. Sinexon, Chief, Paulsboro, N. J.:** We have a pool table, card table, radio and piano at our stations. The borough purchases and owns all the fire apparatus and equipment in the department, but both houses are owned by the companies. The borough pays for the light, heat, etc., so the companies have little expense of upkeep.

Funds for recreational equipment are available through dues and donations.

Such equipment is beneficial in that it causes interest in the fire company and therefore there are usually men at the house, which is very satisfactory in the event of fire.

**Frank H. Stortz, Chief, Emaus, Pa.:** We have a pool table and cards at our department for the men. Funds for such are raised through the patronage of the bar, etc.

Recreational equipment in fire stations bring the men together and there is usually some one there in case of fire.

**Michael E. Riley, Chief, Wareham, Mass.:** We have no recreation equipment whatsoever in our department.

**Chas. Earley, Chief, Turners Falls, Mass.:** Recreational equipment is purchased by the Firemen's Relief Association. Such equipment always bring the firemen together and it gives them an opportunity to discuss matters which are beneficial to all.

**John Valentour, Chief, Kane, Pa.:** Our department is a volunteer one and we, therefore, have no recreational equipment for our members.

**W. H. H. Atkins, Chief, Marblehead, Mass.:** There is nothing in the way of recreational equipment in our two stations other than card tables.

**J. C. Inglee, Chief, Whitehall, N. Y.:** We have a pool table in our station. The men bought it themselves by donations from members.

In my estimation it helps to maintain the morale of the departments and helps to keep the men occupied in their spare time. In my opinion the use of recreational equipment for the department is a wonderful asset.

**Fire Department, Rochester, N. Y.:** We have pool tables in practically all companies. We also have bowling and golf tournaments by members on off platoons.

Such equipment is purchased by the members of the companies or with donations received.

Recreation of this sort is very beneficial in every way.

**Geo. F. Wiesing, Chief, Sayre, Pa.:** We have no recreational equipment whatsoever in our department.

**Alvin Wright, Treas. Fire Dept., Charleston, Ill.:** I am sorry to say we have nothing except a card table the men bought themselves. I believe this is a very poor pastime for any department, without some other means of diverting the men's minds during the time they are not fighting fires. It is my belief, that, in order to have good firemen, they must be healthy and alert at all times. The best way for them to be both healthy and alert is to get the proper exercise.

Members of Eastern Delegation, I.A.F.C., in Front of the Lincoln Memorial, Washington, D. C., on the Return Trip from the Knoxville Convention

## DEMONSTRATIONS STAGED AT THE I. A. F. C. KNOXVILLE CONVENTION

**Manufacturers Show the Operation of New Aerial Ladders, Lighting Plant, Fog Nozzle and Centrifugal Pump — New Honorary Life Members Elected**

A NUMBER of interesting demonstrations were staged at the Knoxville Convention. New aerial ladders were shown in operation, the Homelite 800 watt lighting plant was demonstrated at night and the new Akron Brass fog nozzle was shown in operation and demostrations were made of the Barton front mounted centrifugal pump on a Ford chassis.

The demonstration of the fog nozzle consisted of extinguishing a fire in a large pit of oil, which had been permitted to burn for ten or fifteen minutes. The large fog nozzle extinguished the fire in a few seconds. Then the small fog nozzle, on a 1½-inch hose, was employed for the same purpose, and took but little longer to do the same job.

This second nozzle was also used to extinguish a fire in an automobile which had been saturated inside with gasoline. Here again the fog nozzle did quick work.

The demonstration of the Barton front mounted centrifugal pump showed what these small units were capable of doing. In the first test, with 80 pounds hydrant pressure and with two fifty-foot lines of 2½-inch hose, siamesed to a 1¾-inch gun, the pump delivered 155 pounds pressure, and at a nozzle pressure of 91 pounds, the discharge was 867 gallons per minute.

In a second test with a 91 pounds intake pressure on the pump and 180 pound pump pressure, the pump discharged through two fifty-foot lines of 2½-inch hose with 1½-nozzle. The nozzle pressure was 140 pounds and discharge 789 gallons per minute.

### New Honorary Life Members

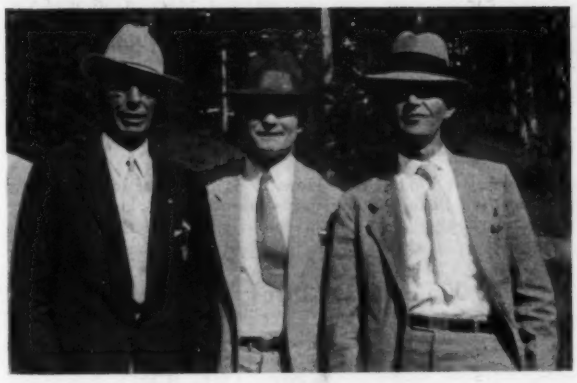
Quite a number of new honorary life members were elected at the Knoxville meeting. Fire Commissioners Otto Wagner and C. S. Chandler, of Elizabeth, N. J., who have been attending Conventions for 25 years and have always arranged the Chief, too, should be on hand. In view of this splendid

L. to R.—Mrs. Frank Shaw, Greensboro, N. C.; Mrs. W. P. Cooper, Richmond, Cal.; Mrs. William H. Gardner, Kansas City, Mo.; Miss Nell J. Anthony, Washington, D. C.

The Ladies Were Well Represented at the Knoxville I. A. F. C. Convention

Top—the New York State Delegation; Center—Michigan; Bottom (but always on top in attendance)—New Jersey.

The Various Sections of the Country Were Well Represented at the Knoxville Convention



L. to R.—Chief Frank Shaw, Greensboro, N. C.; Chief William H. Gardner, Kansas City, Mo.; Chief H. B. Wells, Newberry, S. C.

**Three Well Known Chiefs at the I. A. F. C. Convention**

cooperation with the association, they were both made Honorary Life members. Others who were honored included the following: Chief Filmore Tyson, Olds Motor Works, Lansing, Mich.; Ex-Chief Jethro Gibbs, Montclair, N. J.; Ex-Chief August Gerstung, Elizabeth, N. J.; Frank F. Stover, Chicago, Ill.; Ex-Chief John C. Egner, Kansas City, Mo.; Ex-Chief James J. Mulcahey, Secretary-Treasurer I.A.F.C., Yonkers, N. Y.; Ex-Chief W. H. Sawber, Decatur, Ala., and Ex-Chief Charles S. Hafer, Little Rock, Ark.

* * *

### Convention Notes

The entertainment at the Knoxville Convention was of very high order and there was plenty of it. Starting with a dance and buffet supper on Tuesday evening at the Hotel Andrew Johnson and followed Wednesday morning by a motor trip to the Great Smoky Mountains, with a country ham and fish feast, in the park and then on Wednesday evening with a smoker at Whittle Springs Hotel; and finally, the banquet and Grand Ball on Thursday evening at the Cherokee Country Club, there was nothing to be wished for in this part of Convention activities.

*

Many guests were taken by car out to the Norris Dam, but they had to find time for this trip outside of other convention activities.

*

A delegation of Chiefs including Chief Jay W. Stevens, Chief Charles J. Brennan, and Chief John Evans visited and placed a wreath on the tomb of former Chief Sam B. Boyd, of Knoxville, Tennessee, who was at one time President of the International Association of Fire Chiefs. In addition, a wreath of flowers was sent to Mrs. Boyd, his widow, who resides in Knoxville.

*

A very interesting picture entitled "The Bad Master," was presented at the Wednesday evening session by courtesy of Aetna Life Insurance Company. This picture is a "talkie," and points out common fire hazards daily encountered. It was very well received by the members.

## Scully Entertains New England Chiefs

At the Convention of the International Association of Fire Chiefs, at Knoxville, in September, John J. Scully, President of the American Fire Equipment Company, Inc., Boston, Mass., staged a dinner for the New England Chiefs in attendance at the Convention. In addition to the New England members, the high lights of the International were also on hand.

About fifty guests were entertained, and many were called upon to address the gathering after the dinner.

Among those who were present were the following:

Chief and Mrs. Selden R. Allen, Brookline, Mass.; Chief John W. O'Hearn and his niece, Miss Rose McKenney, Watertown, Mass.; Chief and Mrs. John Evans, New Orleans, La.; Chief and Mrs. Henry Fox, and guest, Boston, Mass.; Mr. and Mrs. Edw. Williamson, Boston, Mass.; Chief and Mrs. Peter Steinkellner, Milwaukee, Wis.; Mr. and Mrs. David Corcoran, Milwaukee, Wis.; Chief and Mrs. Henry T. Harrigan, and Miss Doris Harrigan, of Dedham, Mass.; Chief Daniel B. Tierney, Arlington, Mass.; Chief Robert A. Bogan, Baton Rouge, La.; Hon. May Wright, Houma, La.; Chief J. Randlette, Richmond, Me.; Chief Arthur E. Soper, Mansfield, Mass.; Chief Robert M. Tappin, Gardner, Mass.; Chief M. F. Shea, Fitchburg, Mass.; Chief Harold Conran, No. Reading, Mass.; Chief James Moloy, Woburn, Mass.; Chief and Mrs. E. W. Allen, Medfield, Mass.; Chief Fred Sargent, Sunapee, N. H.; Chief and Mrs. Joseph Lawton, Newport, R. I.; Chief and Mrs. Carl D. Stockwell, Burlington, Vt.; Chief and Mrs. Gutheim and daughter, Cambridge, Mass.; Chief Thomas Burns, Bridgeport, Conn.; Chief and Mrs. Wm. J. Noble, New Britain, Conn.; Chief M. Lawton, Middletown, Conn.; Chief Daniel F. Young and J. D. Young, Cranston, R. I., and Vance McDonough.

## ARREST AND CONVICTION OF FIREBUG BREAKS UP NEW YORK ARSON RING

**"The Torch," Convicted Arsonist, Responsible for Many Fires of Incendiary Origin, Sent to Sing Sing Prison — Story of the Arrest**

By Wm. Jerome Daly

FIRE Chiefs and arson detectives the country over, particularly in the East, took a holiday a few weeks ago, when they read of the incarceration in Sing Sing prison of a professional firebug known in New York as "The Torch" but otherwise, Samuel Skoblow—B-74935, Police Headquarters, New York.

Maker of 150 fires by his own admission, until caught redhanded by Fire Marshal Thomas P. Brophy, who knocked him dizzy with a blow to the jaw, Skoblow is now serving a term of twenty to forty years, imposed by Judge Franklin Taylor. in Kings County Court, Brooklyn.

If Skoblow serves only the minimum of his term, he will be sixty-five years of age when Sing Sing's gates are opened for him, if in the interim he does not meet with an "accident" in jail. He turned State's evidence and became informer in the hope of winning a reward of leniency which did not materialize. Consequently a "reception committee" met him upon arrival inside the walls at Ossining, and thus was taken out of social circulation one of the most cold-blooded, calculating and mercenary arsonists yet recorded in the files of incendiarism in New York. A book could be filled with the history of his crimes.

### Arrested by Chief Brophy

Skoblow was arrested May 17, 1933, by Chief Brophy. It was the 26th anniversary of Brophy's stewardship as Fire Marshal of New York, and as usual, he celebrated the event by working. Skoblow was bailed out in $19,000 bonds and helped the authorities clean up the arson mess in Brooklyn, by involving others who hired him to burn. There were three such procurers in Manhattan and eight in Brooklyn—all involved in having engaged Skoblow to set fires for insurance.

One of the employing arsonists was Sam Wurtzburg, president of the "Borough Hall Boys," a quasi-political clique in Brooklyn. Wurtzburg had been a public adjuster of fires. He was in partnership with Eugene J. Shields, who, until ten years ago had been an Assistant Fire Marshal in Brophy's office, but resigned to enter the field of fire adjusting. Shields, too, had been convicted and sentenced to no less than twelve and no more than twenty-five years. The Court of Appeals reversed the conviction on the ground that the District Attorney of Brooklyn had failed to prove that Shields knew that the building was insured against fire. On a new trial, Shields won his liberty over a question of fact. Wurtzburg's conviction was affirmed and he is now in prison serving a term of twelve to twenty-five years. According to the "grape-vine" from Sing Sing, Wurtzburg was chairman of the "reception committee" that "greeted" Skoblow.

Others sentenced with Skoblow for employing him to make fires were: Abraham Goldner, ten to twenty years; "Jack" Mitnick, seven to twenty years; Isidore Kaganowitz, seven to twenty and Dr. "Jerome" Granoff, the same penalty.

### Judge Scores the Firebug

Before imposing sentence, Judge Taylor said:-

"The electric chair would be a fitting penalty for you. These sentences must be written in letters so large that he who runs may read. They must stand as a warning to all firebugs and would-be firebugs that arson will not be tolerated. All of the defendants have rendered some measure of service to the State in testifying against others. For that service, a reasonable reduction will be made in the sentences of four of them. As to Skoblow, he is guilty, on his own

Samuel Skoblow, Alias "The Torch," Arsonist

admission, of about 150 fires, with cumulative penalties in excess of 1,000 years. The electric chair would be a suitable answer for his nefarious deeds. So far as this indictment is concerned, he will get the limit. He has reached the end of his rope."

Until shortly before he was brought into court for sentence, Skoblow led "the life of Reilly," to use the vernacular. He was guarded because of threats made against him in letters he received. One letter suggested "a change of climate" and advised that the atmosphere was "very unhealthy." Whereupon Skoblow, who had been going about greeting friends with the air of a hero, changed his habitat last winter to Miami, Fla., while still under bail. He was on the payroll of the insurance interests in remuneration for his informative services. The District Attorney of Kings County consented to this arrangement, because Skoblow had no means of support.

Skoblow was hopeful of getting a suspended sentence in return for having made a clean breast of his "torch" work, which included the incrimination of those who hired him to defraud the fire insurance companies. However, efforts made by the county prosecutor to reward Skoblow with a light penalty went awry, when the day of reckoning came before Judge Taylor.

### How the Arrest Was Made

When arrested Skoblow had in his pocket a plumber's candle and a quantity of matches. The arrest was the culmination of one year of vigilance on the part of the Fire Marshal's staff, together with operatives of the Arson Bureau of the National Board of Fire Underwriters and the New York Police Department. One morning shortly after breakfast, Skoblow drove to a multi-family apartment house in Ocean Avenue, Brooklyn. He was followed by Chief Brophy, National Board Agents and city detectives in taxicabs. He entered the building, but soon emerged and removed from an automobile a large package which he carried into a ground floor apartment. Brophy's first concern was to prevent a fire and its possible tragic consequences.

Brophy entered the building and took a seat in the main lobby where he could hear Skoblow bargaining with the occupant, Bernard Barnett, to have the fire made as cheaply as possible. Suddenly Skoblow left the apartment. Brophy, thinking that a fire had been ignited, "bumped" into Skoblow and prevented his exit. Covering both men with a pistol, Brophy marched them back into the apartment. There was no fire, but the "plant" material was in a closet. It was scrap celluloid.

Skoblow threatened Brophy with—"Somebody will pay for this—I'm a busy man!" He gave his occupation as "speculator," He admitted that he had been hired to make a fire, but because of failure of the employing arsonist to agree on the fee, the actual lighting of the torch was postponed.

Skoblow and Barnett were indicted for "conspiracy to burn." Skoblow testified against Barnett and the latter was sentenced to the Penitentiary. Then Skoblow was indicted for having made several fires, but he pleaded guilty to one only and that was a blaze in a grocery store in Flatbush, August 6, 1932.

Skoblow told Chief Brophy that he conceived the idea of arson because "it was easy to collect insurance on a fire in my own loft in Manhattan." It seems that he had touched off some celluloid buttons. The alacrity with which the blaze occurred, gave him the notion that celluloid was the more "successful" ingredient to use for a crooked fire.

Like most others who are trapped, and with all hope of judicial leniency gone, he lamented, after a fashion:

"I'd advise anyone against resort to the torch, but in all my operations, I used every precaution to protect human life. I wouldn't harm an animal. In some of the fires I made, I even turned in an alarm to make sure that the firemen would come and check the fire before endangering those who resided in the houses."

Skoblow, in "The Big House," is in more danger now than he had been for the many months that he was "freelancing" around New York.

## $5,000,000 Drop in Losses Reduces Premiums

As a direct result of the conviction of Samuel ("the Torch") Skoblow, professional firebug, and his associates, and the breaking up of the arson ring through the efforts of Fire Marshal Brophy, of New York, drastic reductions were voted on October 11 at a meeting of the Rating Organization of the New York Fire Insurance Exchange. The new rate became effective at once and was retroactive on all policies in Brooklyn issued since August 1, 1935.

Prior to 1931 there had been a gradual increase in fire insurance premiums on merchandise in stores and household furniture in congested areas which are designated as the Williamsburg, Brownville, East New York and Coney Island districts, which was finally fixed on April 22, 1931, at an increase of 50 cents of each dollar of premium on this class of risks in these districts.

Fire losses in Brooklyn have dropped from about $8,000,000 in 1930 to the $3,000,000 level for this year.

Here are the figures:

| | |
|---|---|
| 1930 | $7,882,428 |
| 1931 | 7,057,849 |
| 1932 | 9,939,872* |
| 1933 | 4,828,868 |
| 1934 | 3,712,398 |
| 1935 (to June 30) | 1,564,398 |

* The Coney Island fire accounts for about $2,000,000 of the total loss in 1932.

In April of 1933 the Brooklyn Chamber of Commerce issued an alarming report on the Brooklyn arson industry, describing it as "the biggest racket in the city." Two old line insurance companies had stopped writing policies here and high rates were being charged by those that would still place fire insurance.

This increase was discontinued by the order made on October 11, and amounts to a reduction of one-third of the premium. A merchant who carried insurance on $50,000 of merchandise was obliged, under the old order, to pay a premium of $1,000 a year. Under the new rates, effective as a result of the decreases in fire loses, the merchant will now save one-third of that premium, or $333.

Rates are correspondingly decreased in the districts mentioned. It is conservatively estimated that on the usual three-year policy residents and storekeepers of the sections named will effect a saving of almost $1,000,000.

## Fire Prevention Group Meets at Reading

A talk on electrical fire hazards was given by Mr. Dennis, of the State Examiners of Electricians, at the meeting of the Massachusetts Fire Prevention Association, held at the town hall, Reading, Mass., October 28. He told how the hazards might be overcome, and the cooperation that should exist between the electrical and the fire inspectors. Other topics discussed included dump fires, shutting off sprinkler systems in freezing weather, and the dangers that might result.

The next meeting will be held at the Central Fire Station, Somerville, Mass., November 25.

## Illinois Firemen Meet at Waukegan

Better civil service protection for firemen and a decent pension system were urged by Michael L. Igo, U. S. District Attorney, at the convention of the Illinois Firemen's Association held at Waukegan, October 15 to 17.

During the convention there was a demonstration of the new Pirsch aerial ladder, and an extinguisher made by the Akron Brass Company.

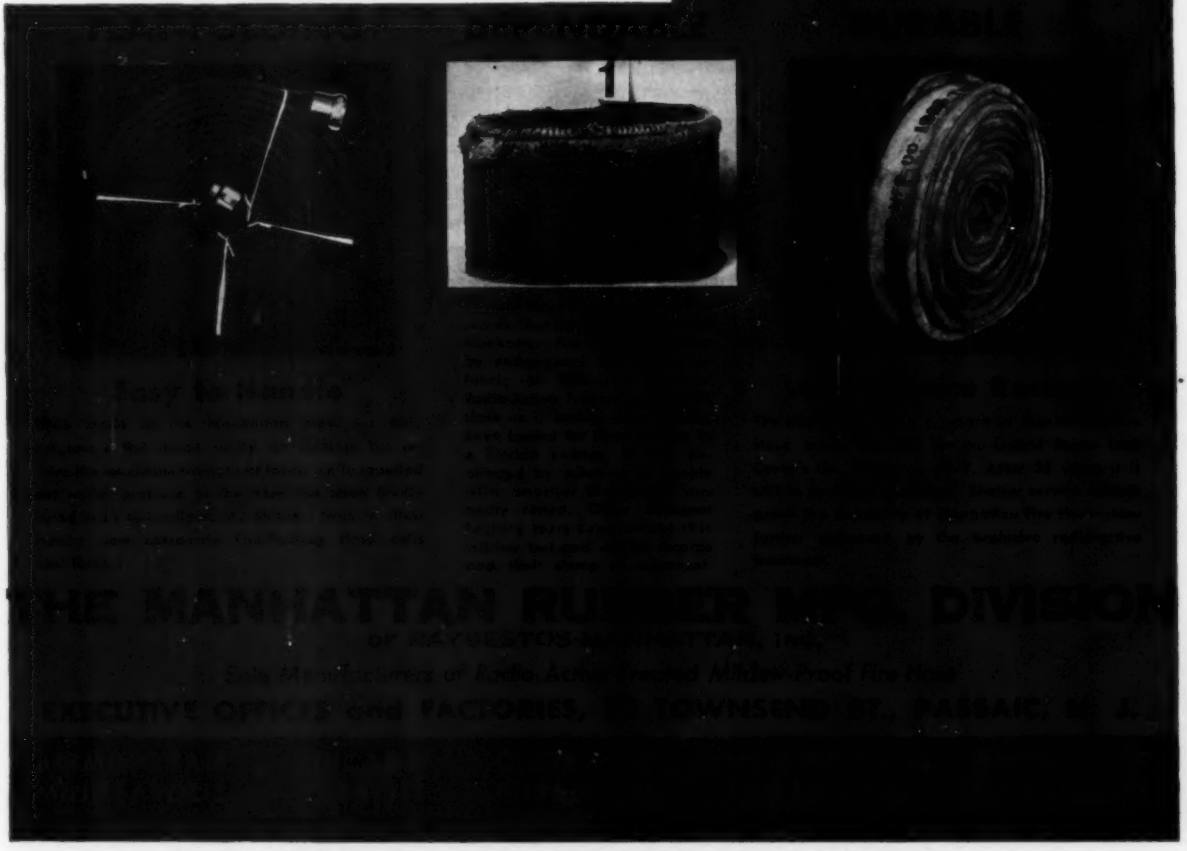
The new officers are Frank J. Rutkowski, Steger, President; George Knol, Cicero, Vice-President; Roy W. Alsip, Champaign, Secretary; Simon Kellermann, Jr., Edwardsville, Treasurer, and Elmer W. Weidler, Mt. Olive, Historian. The 1936 convention will be held at Pekin.

# WITH THE GREEN COLOR

## FOR IDENTIFICATION AS

**Look for the GREEN Jacket which means genuine Manhattan TREATED Mildew-Proof Fire Hose.**

Manhattan chemists have perfected an original process for treating fire hose fabric with salts of rare earth metals which have radio-active properties. This process—exclusive with Manhattan—renders the hose mildew-proof and moisture-repellant, rot-and freeze-proof. It makes careful drying unnecessary and preserves the original strength and flexibility. Thus the useful life of Manhattan FIRE HOSE is limited only by natural wear or possible accident in use.



# GILSON *All Angle* FIRE TOOLS

KEEP THEIR POSITION ON THE GROUND OR PAVEMENT, UNDER PRESSURE, WITHOUT WHIPPING AROUND - - *(See photo below)*

## THE WATER CURTAIN

is used as a protection for men, buildings, oil tanks or to cover any exposure. It spreads a solid sheet of water 60 feet wide by 20 feet high, and acts as a shield against radiant heat, smoke, gases, etc.

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NOZZLE—CAT. NO. G-640

## THE NOZZLE

**with back pressure control**

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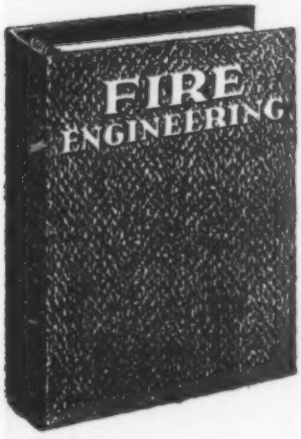


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# The WATCH DESK

Our inquiring reporter overhauls the firemanic news of the day

By Roi B. Woolley

### New Job For Firemen

The Eldorado (Ark) F.D. added new deed to its list of laurels when it entered in ledger this item: "Harvey Ritchie of Hampton, Ark., saved from quicksand in well bottom." Ritchie, suspended by ropes and a plank fifteen feet below ground, had been imprisoned in quicksand for over eight hours when F.D. was called. Firemen threw hose into well, hooked to booster pump and with 150-pound pressure literally washed Ritchie out of sand trap.

### New Use for Fire Alarm

Up in Whitewood, Saskatchewan, they were going to have a church-cleaning bee. Only Herb Parker showed up. Not willing to do all work alone, he rang in fire alarm which brought plenty crowd. Church looked neat and natty for Sunday's services.

### Court Orders Firemen Re-Instated

Due to economy measures, 120 policemen and 28 firemen in Philadelphia were discharged December 31, 1931. Last month Judge H. S. McDevitt, that city, in sweeping opinion, declared Department of Safety to be "undermanned," its employees "over-worked" and taxpayers "without adequate protection"; ordered 112 vacancies in Bureau of Fire filled "without delay." The successful suit to restore discharged employees was brought by S. Davis Wilson, City Controller, as a citizen and a taxpayer.

### Efficacy of Fire Drill

Almost daily papers prove wisdom of fire drills in places of public assembly. Noticeable among others was item stating 250 inmates of Hebrew Orphan Asylum, Brooklyn (N. Y.), were aroused about 3 o'clock in morning by fire in classroom. In conformity to drill all dressed and marched out. Firemen called by watchman outside building, who discovered fire, quickly quelled it. Additional clipping told of fire in New York City movie house, where several hundred obeyed exit instructions and departed without confusion, while firemen doused blaze. "Re-opening of schools emphasizes importance of frequent drills," sez Vet. Fireman.

### Court's "Hot" Decision

A claim for cigarette fire, allowed by a precedent-flouting court, has got insurance companies worried. According to Business Week (August 10, 1935) "The old cigarette torch has reared its ugly head in insurance circles once more, with the first upper court decision that insurance people remember awarding a fire claim for a cigarette burn on a rug. The Supreme Court of Rhode Island recently decided that a cigarette burning on a rug constituted a hostile, rather than a friendly, fire; hence, insurers on household goods were liable under the standard policy which does not have a specific exclusion clause covering cigarette burns. This was contrary to the great mass of decisions handed down in other states. . . . Claims for new rugs, chairs, etc., damaged by cigarettes used to be a racket and a nuisance until the weight of dozens of court decisions stamped them out."

Question is, will insurance companies insert an exception clause into their policies—or wait and, perhaps, pay? Also, will this lead to increase of these "racket fires?"

### Fire Truck Fire Fusses Firemen

Harry J. Murphy, chauffeur for N. Y. F. D. is just a driver; smoke-eating isn't in his line. Fire truck he was returning from Bayside (L. I., N. Y.) where it had been on replacement duty, caught fire from short-circuit, in Brooklyn. "Fire!" yelled Murphy, snapping nearest alarm box, bringing Battalion Chief, two hook and ladder and, three engine companies. Blaze was put out—so was Murphy.

### A Hot Rub

Louis Rossman, aged 64, was enjoying alcohol massage in Turkish bath, Atlantic City, (N. J.), when man on next slab lighted cigarette, flipped match onto Rossman's back, igniting alcohol, sending victim to hospital seriously burned. Most folks prefer their alcohol internally!

### Heat Hops Up Firemen

Fire officials of Woonsocket (R. I.) attribute three fires, causing $60,000 loss, which occurred simultaneously in three different mills, to spontaneous combustion due to extreme heat of last month. Enterprise Garneting Mill took fire first, was destroyed. While working there, firemen got alarm for fire in wool warehouse of another mill. And few minutes later alarm sounded for Shambow Shuttle Company's plant. Fast work by blaze-beaters confined flames, but four firemen were injured.

### Where "Fun" Was Fatal

At State American Legion Convention, The Dalles (Ore.) Olaf Nelson, playing part in comedy, dressed in grass "Hula" skirt. It is claimed J. A. Moore playfully touched match to Nelson's costume, which flared up. Nelson died of burns. Moore charged with manslaughter.

### Brave Little Rescuers Perish

Two 5-year old boys, Roland Elliott and Erwin Vanderwalle, saw smoke and flame coming from barn on farm of Mrs. Elliott, Williamson (N. Y.), rushed in, trying to save kittens. Both perished, body of one being found just inside door, two dead kittens in his arms. A two-year old sister of one of the victims was rescued by mother.

### Another Insurance Problem

A few weeks ago fire or collapse of structure, or both, destroyed warehouse at Hiram Walker's, Peoria (Ill.), liquor distillery—loss $3,000,000. An aftermath was difference of opinion between Hiram Walker & Son and the Western Factory Association, a group of fire insurance underwriters, which may be decided by court.

Question was one of liability on part of insurance group. The standard fire contract contains a clause providing for immediate cessation of all fire insurance on a building and its contents, if the building, or any part of it, falls, except as a result of fire. Hiram Walker rack warehouse, containing thousands of barrels of whiskey was new, on made land. Either before or after collapse of a wall came an explosion, followed by fire which swept into distillery's main plant. If collapse came first it seriously affects insurance payment. While most insurance companies pay without much argument in cases of this kind, this case involving so much money has created controversy.

### "Duds!" Howl Nudists, Escaping Fire

Flames starting near Arcadian cult camp, 25 miles east of Los Angeles (Cal.) sent nudists howling for help—and clothes—both of which came on run through efforts of A. K. Crebbins, Assistant Superintendent of Angelus National Forest.

### Near Tragedy Averted

State police and forest rangers near Eugene (Ore.) worked fast to prevent disaster to fisherman, who had his lantern filled at a service station. After he had left, attendant discovered he had loaded lamp with gasoline instead of kerosene. Troopers found fisherman just in time.

## WHAT DO YOU KNOW?

The Editor of "The Watch Desk" welcomes contributions from readers of Fire Engineering that briefly give facts about interesting, odd things that have to do with fires, fire-fighting, etc. Address "Editor, Watch Desk."

# Questions and Answers

**NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified**

## Aluminum Dust, Etc.

*To the Editor*:

I would like to seek some information in regard to the hazards of powdered aluminum and powdered bronze, also the best agents for extinguishing fires in same.

What are the explosive hazards, what gases are formed when mixed with water, and what effect have they on human life, if inhaled in different quantities?

The building I have reference to is as follows:

Size 50 x 75 feet, two-story, with basement of brick and wood construction, no sprinklers, one exposure of two-story dwelling 10 feet away.

Contents: 25,000 lbs. of powdered aluminum.
25,000 lbs. of powdered bronze.
200 gallons of varnish.
50 gallons of lacquer thinner.

The contents are packed in metal, wood and cardboard containers.

Questions: (a) If you had a small fire in this building how would you extinguish same?

(b) If you had a fire which involved a whole floor how would you extinguish same? E. W. A.

*Answer*: We believe the following description of aluminum and its hazards will answer your questions.

*Aluminum dust*: This metallic dust is usually found in barrels or boxes, in which it is shipped. Like carbonaceous dust (wood, charcoal, coal, grain, etc.) aluminum dust when mixed with air form an explosive mixture.

Aluminum dust burns quietly when in a pile, but if this pile is disturbed in such a manner as to raise a cloud of the dust in the air, the burning takes place with explosive violence. If the dust cloud already formed has a density within the explosive limits to be ignited, a violent explosion results. Aluminum powder is ordinarily stable under friction, but gentle rubbing after the addition of potassium chlorate, causes it to explode violently. The following precautions should be observed to prevent explosion or ignition of aluminum dust in storage. Keep the dust dry; keep rooms at even temperature—to prevent condensation of moisture and prevent conditions favorable to the generation of large static charges of electricity; if the dust begins to darken (oxidize), immediately remove it from the room where other dust may be present, and thoroughly ventilate the place to remove any hydrogen gas that may have been generated; use no naked lights; keep the air as free as possible from dust.

Hydrogen gas is not toxic

In case of fire, do not use water; it may cause an explosion.

If the dust starts to burn from spontaneous heating or other causes, and water is thrown on it, burning hydrogen is liberated immediately, when the dust is thrown into the air, and a terrific explosion may result. In one case on record a violent explosion resulted from pouring molten aluminum through a screen into a bucket of water.

Spontaneous heating often takes place in piles of dust exposed to air, and evidently such heating is accelerated by an excess of oil. The remedies of such heating are self-evident; first to prevent the collection of dust, and second, to regulate the amount of oil.

Attempts have been made to use carbon tetrachloride as an extinguisher for putting out fires in aluminum dust, but this was found to be as bad as water. If a fire in a gob of aluminum dust be isolated, a crust of aluminum oxide forms over the surface and smothers the fire. This method of extinguishing a fire is evidently dangerous, for any accidents that raise the pile into a dust cloud would immediately cause an explosion.

In one of the factories handling aluminum dust, oil is poured onto the fire until the oil burns and the aluminum fire is smothered, whereupon carbon tetrachloride is used to extinguish the fire in the oil.

In another factory, sand is poured carefully on the pile, the pile is isolated and the fire smothered in this way. It appears that fine shale dust, such as is used in coal mines to prevent explosions, may be used to advantage, as the shale makes a denser cover that excludes the air more completely.

To extinguish the fire in the aluminum dust the above method should be carried out. Care should be taken if the fire is not in the aluminum dust, to keep it from entering into the dust. Care should also be taken to keep water out of the dust.

Bronze does not represent a hazard by itself, but in combination with aluminum it is dangerous.

If the whole floor is involved, then there would be a job. Possibly the only way to handle this fire would be to use streams, keeping water away from the aluminum, especially that portion packed in other than metal containers.

## Nozzle Reaction

*To the Editor*:

What is horizontal, or pull back, pressure on a 2-inch nozzle at 100 pounds nozzle pressure? Please give formula for working same. J. G.

*Answer*: With reference to reaction of fire streams the following is given:

The reaction at a nozzle in pounds equals $1\frac{1}{2}$ d x d x p.

Where d is the nozzle diameter in inches, and p, the pounds pressure at the nozzle per square inch.

In the example you cite, where the nozzle diameter is 2 inches and the nozzle pressure is 100 pounds, the reaction (or kick back) would be 1.5 x 2 x 2 x 100 or 7 x 600 pounds.

## Nozzle Pressure on Deluge Set

*To the Editor*:

In our city we have a piece of fire fighting equipment called a deluge set which is a 4-way $3\frac{1}{2}$-inch siamese with a 2-inch nozzle. Will you kindly send me the formula to work out the nozzle pressure on a given layout.

Problem—Four $3\frac{1}{2}$-inch lines 300 feet long, each; 2-inch nozzle; 180 lbs. engine pressure. G. K.

*Answer*: About the easiest way of solving the problem you give is to first reduce the four $3\frac{1}{2}$-inch lines to a single line of $2\frac{1}{2}$-inch hose. The factor for changing the four $3\frac{1}{2}$-inch lines to a single line of $2\frac{1}{2}$-inch hose is 72. In other words divide the 300 foot lines by 72 and you have the length of the single line having the same friction loss for the given flow.

Then solve the problem in the usual manner.

The formula for solving the nozzle pressure is as follows:

N.P. = E.P. + (1.1 + K x L).

Where K is a factor depending upon diameters of hose and nozzle and L, the number of 50 foot lengths of hose in the line.

K for 2-inch nozzle on a single line of $2\frac{1}{2}$-inch hose is 1.55.

L would be equal to 300 divided by 72 divided by 50 = .0833.

Substituting these values in the formula above.

N.P. = 180 + (1.1 + 1.55 x .0833).

= 180 + 1.229 = 146.4 pounds.

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They are exceptionally strong and flexible—easy to handle, readily coiled and compactly stored. Their construction practically eliminates stretch or warpage in use. Jackets are designed to resist high pressure and hard wear, and give greatest protection to the tube. Tubes have a smooth interior surface and are built up with multiple plies of scientific rubber compound of remarkable aging qualities to assure long life and freedom from leakage.

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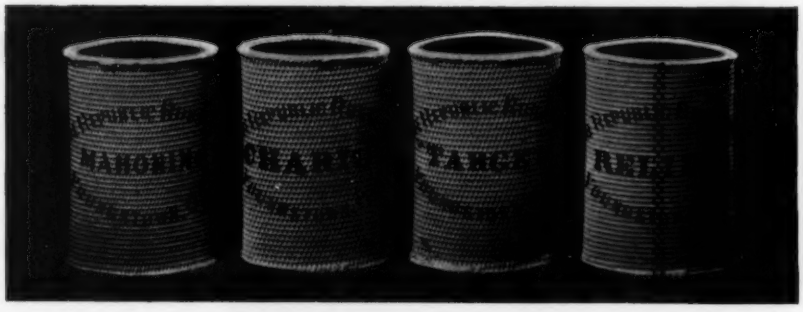

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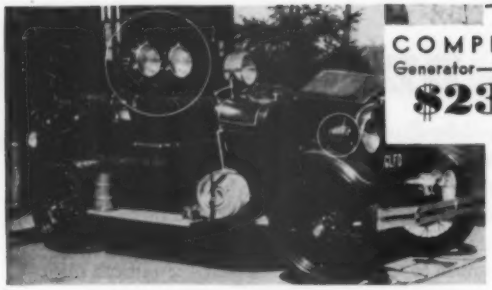

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Generator—2 lights
$235

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**Flarolite**

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A practical, inexpensive floodlighting outfit easily attached to any fire truck or chief's car. Operates from fan belt or power take-off. Provides ample 110-volt A.C. current for two big portable floodlights. No attention required, just roll up to fire, keep motor going, turn on switch and there's your light and lots of it. Set includes 450-watt generator, 2 lights, brackets, switch, sockets, connectors, 250 feet heavy rubber-covered cable; all complete, ready to install. Single Light Outfit, $135.00.

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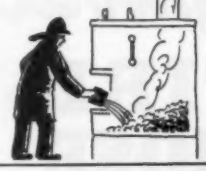

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF MARCH 3, 1933, of FIRE ENGINEERING, published monthly at New York, N. Y. for Oct. 1, 1935.

State of New York, County of New York, } ss.:

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared I. H. Case, who having been duly sworn according to law, deposes and says that he is the business manager of FIRE ENGINEERING and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit;

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York, N. Y. Editor, Fred Shepperd, 24 West 40th St., New York, N. Y. Managing Editor, Fred Shepperd, 24 West 40th St., New York, N. Y. Business Manager, I. H. Case, 24 West 40th St., New York, N. Y.

2. That the owner is: Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York, N. Y. I. H. Case, 24 West 40th Street, New York, N. Y. Frederick Shepperd, 24 West 40th St., New York, N. Y. Karl M. Mann, 24 West 40th St., New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

I. H. CASE.
Business Manager.

Sworn to and subscribed before me this 1st day of October, 1935.

[ Seal ] ELLEN E. DUNCANSON.

(My commission expires March 30, 1936.)

## WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of October, 1935. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

| Month Ending October 31 | Loss in Thousands of Dollars |
|---|---|
| Rochester, N. Y.—Plant of Irondequoit Fruit Juice Co. on Irondequoit Bay | 50 |
| Covington, La.—Mackie Products Co., store destroyed | 125 |
| Chehalis, Wash.—Mill of Winston Creek Lumber Co. | 70 |
| Danville, Pa.—Ritz Theatre destroyed | 70 |
| Perry, Iowa—Roundhouse of Milwaukee Railroad damaged | 80 |
| Camden, N. J.—General warehouse of N. Y. Ship Building Corp. | 180 |
| Weston, W. Va.—Left wing of Weston State Hospital | 180 |
| Bellefonte, Pa.—Property of Sutton Engineering Co. | 50 |
| Rouyn, Quebec—Crushing plant and mill of Granda Gold Mines | 100 |
| Sparta, Tenn.—Mill and warehouse of Lee Lumber Co. | 50 |
| Dermott, Ark.—Dermott Hotel and adj. property | 70 |
| Mexia, Tex.—Plant of Mexia Compress Co. destroyed | 200 |
| Amery, Wis.—St. Joseph's Catholic Church destroyed | 180 |
| Batavia, N. Y.—Bellinger Theatre bldg. destroyed | 180 |
| Geyserville, Cal.—Geyser Hotel and adj. business property | 50 |
| Murray, Ky.—Whse. of Western Dark Fired Tobacco Growers' Assn. | 100 |
| Terre Haute, Ind.—Property of Terre Haute Paper Co. | 50 |
| Boise, Idaho—Plant of Boise Cold Storage Co. | 180 |
| Centerville, N. B.—Kennedy Hotel and adj. business property | 80 |
| Celina, Ohio—Annex of Brandt's Furniture Co. factory | 80 |
| Lake Providence, La.—Plant of Lake Providence Ice Co. | 50 |
| Detroit, Mich.—Plant of Shatter-proof Glass Co. destroyed | 180 |
| Lindsay, Ont.—International Cooperage Co. plant at Eagle Lake | 50 |
| Charlotte, N. C.—Plant of Radiator Specialty Co. damaged | 50 |
| Geneseo, N. Y.—Property of Mrs. Julian Buckley on Avoy Rd. | 50 |
| Muskegon, Mich.—Crosby Whse., docks, and Penna. freight shed | 50 |
| Orangeburg, S. C.—Belk-Hudson Dept. store bldg. damaged | 50 |
| Rouyn, Que.—Rice dept. store and adj. residences | 70 |
| Lincolnton, N. C.—Lincolnton bonded warehouse | 80 |
| Christopher, Ill.—Stotler-Herrin lumber yard destroyed | 80 |
| Ann Arbor, Mich.—Kyer-Whitaker Company warehouse | 70 |
| Baker, Mont.—Burns garage and adj. property | 50 |
| Cicleville, W. Va.—High school bldg. destroyed | 70 |
| La Crosse, Wis.—Property of Listman flour mill destroyed | 250 |
| Port Allegany, Pa.—Factory of Cameo Doll Co. destroyed | 70 |
| Victoriaville, Que.—Tourigny business and apartment block | 70 |
| Thessalon, Ont.—Yards of Crane Lumber Co. damaged | 125 |

**Correction:** The destruction of the Shelter Rock Country Club by fire which resulted in a loss of $65,000 and reported in the October issue as having occurred at Manhasset, L. I., was not in the Manhasset-Lakeville Fire District.

## New Hampshire Chiefs Enjoy Outing

The fall outing and ladies' day of the New Hampshire Fire Chiefs' Club at Laconia on October 9 was enjoyed by a party of 168 Chiefs and guests, including a delegation from the Fire Chiefs' Club of Massachusetts. Luncheon was served in The Tavern at Laconia, after which there was a trip on the steamer "Mt. Washington" on Lake Winipesaukee. The weather was ideal and the autumn foliage was at its best.

Chief E. B. Riley, of Keene, President; Chief Albert C. Melendy, of Nashua, Secretary of the New Hampshire Chiefs' Club, and Chief Arthur W. Spring, of Laconia, acted as hosts. The Massachusetts group was headed by Chief and Mrs. Charles L. McCarthy, of Worcester.

The trip was thoroughly enjoyed by all those attending and was voted one of the most successful outings ever held by the club.

HARRY BELKNAP.

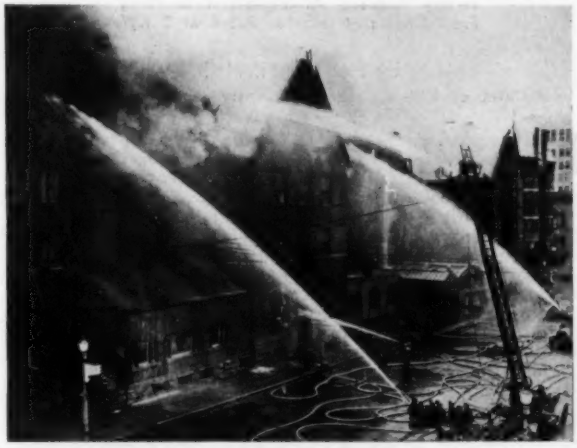
## Ex-Chief Tamblyn, Aberdeen, Wash., Dead

William H. Tamblyn, Chief of the Aberdeen, Wash., Fire Department from 1911 to 1928, Assistant Chief from 1928 to 1934, and again Chief until his retirement, died at the Aberdeen General Hospital on October 16 as the result of a hand infection. He was fifty-eight years old.

He was born at Cardiff, Wales, and saw service at sea as a marine engineer. He traveled around the world, and came to the United States about 1900. Mr. Tamblyn worked for a lumber company in Tacoma. Here he served as a substitute fireman, and then moved to Aberdeen, where he joined the volunteer Fire Department. On June 21, 1908, Tamblyn was appointed a fireman in the paid department. In May, 1911, he was appointed Chief and he served until January 4, 1928. From that date until January, 1934, he served as Assistant Chief, and then was again promoted to head of the department. Chief Tamblyn left the department on June 20, 1934, having reached the retirement age.

## Tacoma Hotel Destroyed by Night Fire

Fire, believed to have started in the carpenter or cabinet shops at about 6 a.m. on October 19, destroyed the historic Tacoma Hotel, at Tacoma, Wash., with a property loss esti-



Fighting the Flames Which Destroyed the Tacoma Hotel

mated at $500,000. First companies at the scene worked to bring to safety the guests marooned in their rooms by the intense smoke, and this is believed to have permitted the

Woman Being Lowered with Aid of Scaling Ladder and Two Rescuers

fire to spread. But the firemen were following out the first principle that is taught at all fire schools, "Save life first."

Seven persons were injured, including three firemen. Two department members narrowly escaped death when they went back to a room in search of a guest reported trapped.

A few shattered walls were all that was left of the historic hotel.

**The City Council of Boston, Mass.,** has recommended the appointment of three hundred additional firemen. The department is short handed because no new men have been added to the force for several years, and vacancies have been filled.

# FLOODLIGHTING GENERATOR SET PLACED ON PRESENT EQUIPMENT

**Body Space of Apparatus Body Not Materially Reduced As Equipment is Hung From Chassis—Generator Rated at 2 KW**

By Howard H. Neil
Chief of Fire Department, Valley Stream, N. Y.

FIRE apparatus in service by the Fire Department of Valley Stream, N. Y., was used for the installation of a floodlighting installation to supply current to three 500-watt and two 250-watt lights.

For some time the department has felt the need for additional lighting at fires, and also for rescue work. Firemen used lights from trucks and also hand lamps, and where the occupant of a nearby residence was willing, a 110-volt connection was made to the power. This "begging" for current proved to be far from satisfactory. After careful consideration, the department decided to place a floodlighting installation on one of its units.

The installation was made by John C. Clendenin, 420 Lexington Avenue, New York, N. Y.

The generator is suspended from the chassis and is driven directly from the power takeoff, with propeller shaft and universal joints. Power is conducted through a voltage regulator to the necessary switch box, from which the power is conveyed to water-tight outlets in the car. Three of the outlets are placed on the inside at the front and three at the rear. Two are on either side, and one on the end of the cable, which is suspended under the rear of the body. A voltage regulator provides automatic voltage control, so that even though there may be variation in engine speeds and load, there is no variation in voltage. This protects the lamps against undue voltage and also makes it unnecessary for a man to constantly adjust the controls for the voltage.

The generator is a 2 kw., 110-volt direct current General Electric generator, which develops its rating at 600 r.p.m. The engine speed is never over 800 r.p.m.

Three hundred feet of cable are suspended on a reel in the rear. It is a live circuit when the generator operates, so that power is available as the wire unreels. There are four small cable reels which can be plugged in through the outlets. Each of these reels contains one hundred feet of cable. The small reels are portable and may be stowed away in compartments of the truck. The wire is No. 10 2-conductor rubber jacketed cable, while the outlets and connectors are of waterproof type.

The lamps are supported on tubular stanchions placed at the sides of the truck. A tube insert is attached to each lamp so that the lamp may be removed from the car and placed in a position remote from the apparatus, and set on a portable base. Four such bases are included as a part of the equipment. The exposed parts of the installation are chromium plated.

In placing the lighting unit on the truck, no body space was taken away except for a small section for the switch panel under the seat. The cable reel was suspended below the body.

## Rhode Island Chiefs Resume Meetings

Following the summer recess, the first fall meeting of the Fire Chiefs' Club of Rhode Island was held in Providence, R. I., on October 10.

Memorial services were held for the late Daniel F. McLaughlin and George N. La Salle, who passed away since the June meeting.

Following a talk by Joseph Cook, Boston, who was the speaker of the evening, a spaghetti supper was served to 140 members and guests. Harry Simone provided sound motion pictures.

## Nebraska Firemen Meet at Hastings

Gov. Roy L. Cochran, praised the work of the firemen in a talk before the convention of the Nebraska State Volunteer Firemen's Association held at Hastings, October 15 to 17. He touched briefly on the new firemen's pension law, the new arson law, and other matters relating to Fire Departments.

The new officers are Cliff Galley, Columbus, President; Fay H. Wood, Seward, First Vice-President; Carl Werner, Battle Creek, Second Vice-President; Louis A. Novak, Norfolk, re-elected Secretary-Treasurer. The next convention will be held at Columbus.

During the convention there were exhibitions at the drill tower, a dance, and a parade led by the Governor.

## Pittsburgh May Have New Fire Station

The Pittsburgh City Council has received word from Harrisburg that state PWA authorities had approved the city's tentative request for $258,750 towards construction of a new $575,000 municipal building at Federal and Ohio Streets on the North Side. The city is to appropriate $316,250 towards the erection of the proposed new three-story structure, which will house a police station, police court, three fire companies, a Battalion Chief's quarters, a modern central fire alarm office for the North Side and a large auditorium on the top floor of the building.

The new structure will replace old Allegheny city's seventy-three-year-old city hall, which has been in a very dilapidated condition and a fire hazard for a number of years and which has jeopardized the central fire alarm office of the North Side, located on the third floor of the old structure. A number of fires have occurred in the old building, but fortunately, they were quickly extinguished by the Fire Department before much damage was done. The new building, like the present structure, will face on four streets. Chief Smith has been advocating a new structure for quite a number of years and has pointed out the extreme danger to the North Side fire alarm system, in case a serious fire started in the building.

If this new structure is erected as proposed, quarters will be provided for Engine Company No. 43 and Battalion Chief's quarters, now located at Arch and Jackson Streets; Engine Company No. 46 and Truck 46, located on Sandusky Street, between Park Way and South Diamond Street, with a possibility of enough space for an extra Engine Company.

WM. E. PATTERSON

Side and Rear Views of the Floodlighting Equipment Placed on a Rescue Squad

*Neither Ice nor Sleet can stop the* **Fedelcode's** *Mighty* **Tone Roar**

**FEDERAL VERTICAL SIRENS**

The Fedelcode Siren is simple in design, ruggedly built and entirely weatherproof. There is no strain on the motor as it is stopped between blasts.

Powered by a specially designed motor—this Siren comes up to a full speed almost instantly. It can be heard for miles around. The modern audible fire alarm system—immediately recognized above all other noises.

*No. 7 Fedelcode Siren*

*Federal Engineers will gladly make a survey of your village, town or city—free of obligation. Write for Bulletin 41-A.*

**FEDERAL ELECTRIC COMPANY**
8702 SO. STATE ST., CHICAGO



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MIDWESTERN
**FIREMEN'S COAT**
*the best coat you can buy at any price!*

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**THE FAMOUS SAFETY SNAP**
Fastened or unfastened with one hand in a jiffy. Will not catch on clothing. Comes only on Midwestern coats.

**2.**
**MADE OF VANITEX**
A waterproof, durable, pliable material manufactured exclusively for MIDWESTERN. It is acid proof, soft, flexible, good looking and long wearing.

**BEWARE OF CHEAP IMITATIONS**
Look for the double eagle label on the coat you buy. "The best is the cheapest in the long run."

*Write for our Free Illustrated Catalog showing complete line of our rubber and canvas garments. Satisfaction Guaranteed.*

*U. S. Pat. No. 1944475* *Canadian Pat. No. 345601*

Midwestern Manufacturing Company
MACKINAW, ILLINOIS
*Manufacturers of a Complete Line of Quality Firemen's Clothing*

**ALL-SERVICE GAS MASKS**
★ ★ ★ **BURRELL TYPE** ★ ★ ★

In the ordinary course of duty, your firemen may be exposed to every gas (or combination of gases) in the book. You have no control over that, but you CAN pick their protection.

The M.S.A. ALL-SERVICE GAS MASK is the ONLY canister-type mask approved by the United States Government for protection against combinations of carbon monoxide and ALL other poisonous gases, smoke or fumes. It is light, easily and quickly adjusted, fits any face comfortably without drawing or binding, permits easy and natural breathing, hearing, sight and working freedom,—and when equipped with the Speaking Diaphragm (as pictured),—also assures clear and natural speech.

These are a few of the reasons why a majority of the country's fire departments use M.S.A. ALL-SERVICE MASKS. For more complete information, write for Bulletin EA-1, or better still, let us arrange a practical demonstration, without obligation to you.

MINE SAFETY APPLIANCES CO. PITTSBURGH, PA.

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**Braddock, Thomas and Meade Sts., Pittsburgh, Pa.**
**District Representatives in the Principal Cities**

**M.S.A. Products include Breathing Apparatus . . . Inhalators . . . Masks of all Types . . . Gas Indicators . . . Gas Detectors . . . M.S.A. Safety Goggles . . . M.S.A. Protective Hats and Caps . . . Edison Electric Cap Lamps . . . Safety Clothing . . . First Aid Equipment . . . Submarine Escape Apparatus. Descriptive Bulletins will be sent on request.**

Sterling Free Rolling Jr. No. 20

Beautiful — Powerful, distinctive tone—moderately priced—precision built and guaranteed perfect mechanically by the world's largest exclusive maker of sirens. Stick to Sterling—makers of quality sirens since 1902.

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**STERLING Streamline SIREN**

The Sterling Siren Fire Alarm Co., Inc.

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COMPLETE LINE OF FIRE ALARM SIRENS—¼ TO 5 H.P.

**RED COMET STOPS FIRE AUTOMATICALLY**

and is now protecting hundreds of homes, stores, industrial plants, warehouses, garages, filling stations, automobiles, trucks and busses, in every state in the Union, in Alaska, Canada, and in hundreds of Fire Departments.

*We want Fire Department men to represent us!*

We have splendid openings in some territories where we particularly want Fire Department Men to represent us. Commissions are good—and we have a complete line of Automatics, Manual Grenades, Pump Guns, Soda-Acid and Foams in 2½ Gallon Size, Chemical Engines, Fire Sirens, and unusually good Fire Department Hose.

If you have any time on your present job, be sure to write us for Free Facts and complete information, which will be sent you without any obligation.

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HIGHEST QUALITY

**MOTOR FIRE APPARATUS**

*Send in your Specifications for Prices*

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ELMIRA, N. Y.

**INDIAN FIRE PUMPS**

The INDIAN uses only clear water; no chemicals to buy or bother with. Quickly refilled from stream or faucet. Throws strong 50-ft. unbroken fire stream with ease. Ventilated tank feature keeps carrier's back warm and comfortable, and this is a great aid in the hazardous work of fighting fires. The INDIAN combines the ideas of the foremost authorities on forest, brush, grass, and grainfield fire fighting. *Write for details.*

**D. B. SMITH & COMPANY**

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ESTABLISHED 1907

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FIRE PUMPS HALE CONSHOHOCKEN PA

Twenty-two years of specialization in the design and manufacture of fire engine pumps has added very definitely to the intrinsic value of Hale Pumps.

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**WATEROUS FIRE PUMPS**

ESTABLISHED 1886

Waterous Dependable

WATEROUS COMPANY

SAINT PAUL, MINNESOTA

Valuable Information

All the manufacturers you will find represented in our advertising pages have interesting and valuable data about their equipment which is yours for the asking. When writing, be sure to mention FIRE ENGINEERING.

# MODERN FIRE HEADQUARTERS ERECTED AS PART OF A MEMORIAL

**Madison, N. J., Receives as a Donation the Hartley Dodge Memorial Municipal Building, Part of Which Accommodates the Fire Department**

By Henry W. Pilch
Madison, N. J.

THERE was recently dedicated to public use Hartley Dodge Memorial, the new municipal building at Madison, N. J. This beautiful structure is the gift of Mrs. Geraldine Rockefeller Dodge, in memory of her son, Hartley, who was killed in an automobile accident in France in 1930.

The edifice, estimated to have cost in excess of $800,000, is constructed entirely of granite and steel, with marble facings and trim, and is as fireproof as architects can design. All metal fixtures, as well as window casings and doors, are of solid bronze. Every item of the construction was personally inspected by the donor.

## The Fire Department Headquarters

Headquarters for the Fire Department, which occupies the west wing of the new building, received the special attention of Mrs. Dodge and her architects, when plans for the structure were being prepared. Long a friend of the firemen, she once before made them the recipients of her bounty when she presented them with a 1,300 gallon Ahrens-Fox pumping engine, fully equipped.

**The Fire Department Headquarters, Part of the Hartley Dodge Memorial Municipal Building of Madison, N. J.**

The apparatus room is equipped with five overhead doors, the sections of which are of solid bronze, and which open automatically by pulling chains which are suspended from the ceiling over the drivers' seats of the apparatus. As the trucks roll out of the doorway, the rear wheels pass over an electrical device which causes the doors to automatically shut thirty seconds later. The doors may also be opened and closed manually, or they can be set to remain open indefinitely.

The room is heated by means of heating units suspended from the ceiling, equipped with motor driven blowers. When the apparatus returns from a fire in cold weather, the room can be heated up in a few moments after the apparatus doors are closed.

The entire apparatus room is finished in glazed tile. In the rear is a round iron cover which can be lifted from the floor, and through which wet hose is let down into the basement, where the drying racks and storage rooms are located. A number of plugs are situated in the wall from which current may be obtained for charging batteries on the trucks, as well as 110-volt supply for ordinary purposes.

To the rear of the apparatus room is situated a hall, equipped with telephone pay station, bubbler drinking fountain and door leading to the outside front entrance. On either side of this hall are social rooms. One contains a large billiard table and incidental equipment, while the other is furnished with card tables, settee, lounging chairs, magazine rack, etc.

## Equipment of the Second Floor

On the second floor is located a large meeting room, fully furnished with chairs, desks, and other necessities. This room contains a hardwood parquet floor for dancing.

Adjoining the meeting room is a kitchen, complete even to a broom closet. It is equipped with a large gas range, a kitchen cabinet, and sink. All metal fixtures are porcelain covered and chromium plated.

The dormitory, also on the second floor, contains accommodations for a full-time paid department, if such should become necessary or desirable. Comfortable beds, equipped with box springs and soft mattresses, assure the present paid drivers that they will not suffer from insomnia. A large lavatory, containing toilets, wash basins and showers, adjoins the dormitory. The latter is connected with the apparatus room by a brass sliding pole. The pole-hole is ordinarily kept closed by a cover, which is pulled up to the ceiling by counterweights when the pole is used.

## Spare Apparatus Room in Basement

In the basement of the building are a spare apparatus room, also equipped with a large overhead bronze door, and which is approached from a courtyard in the rear; a storage room, where are kept spare hose, drying racks, extinguishers, brooms, soda and acid, and miscellaneous equipment; a room which contains switchboards for the alarm system, rectifiers for both fire alarm batteries and for charging batteries on the trucks, and which are connected to plugs on the apparatus floor; a battery room, containing racks, cells and other equipment, and last but not least, a locker room and shower room for members of the volunteer companies.

## The Fire Intra-Mural Alarm System

The building is completely equipped with a Gamewell fire alarm system, consisting of necessary batteries, relays, switchboards, circuit-breakers, rectifiers and arrestors. On the apparatus floor, by the watch desk, is the transmitter and gong. A special fire 'phone is used for fire calls, which has an extension in the dormitory and in police headquarters. An extension from the police phone is also situated in fire headquarters. Alarms are sounded on the 5,000 pound silver-bronze bell, which is located in the tower with the electric clock. If an alarm is sounded while the clock is striking, the latter is automatically cut off. To avoid confusion, however, another type of alarm signal is to be installed in a few weeks, it is said.

Aside from the municipal alarm system, the building is equipped with an intra-mural alarm system, with wall boxes in each room, and which register in the Superintendent's office. Should anything go wrong with the battery or alarm system, the thermostatic control, the oil burning apparatus, the electric pumps, or any of the other automatic equipment in the building, it is claimed that indication of this is immediately made known by the ringing of a bell.

At present the borough of Madison, which is situated about 25 miles from New York, has a population of approximately 9,000. The Fire Department consists of three volunteer companies, with a membership of approximately 100 men. Two regular full time drivers are employed, and the apparatus consists of two pumpers and a city service truck.

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## Late "Billy" Sunday a Fire Fighter

Rev. "Billy" Sunday, who was a nation-wide figure as a leader for thousands on the "sawdust trail," and who in his early days was a member of a racing team of the Marshalltown, Ia., Fire Department, died recently at the age of seventy-two.

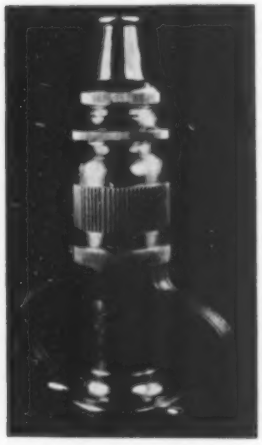
In his youth, the hose companies were social organizations with keen competition when department races were held. He had made a reputation as a baseball player of the Nevada High School team, and he was offered a room, board and spending money if he would run with the Woodbury Hose Team. Although a month before graduation, he left school and accepted the offer.

From his experience as a runner for the Fire Department, he graduated into local baseball, then to membership on a major league team, and finally became the sensational "Billy" Sunday, evangelist.

## Manufacturers' Announcements

### Lum Fire Nozzle

George F. Lum, of Detroit, Mich., has developed and patented the Pro-Tec-Tive fire nozzle, which, in addition to giving a good fire stream, also provides a water curtain for the protection of the hosemen.



Pro-Tec-Tive Nozzle

Mr. Lum claims that with this nozzle it will be possible for hosemen to work close to the fire, as it affords protection from heat and smoke. The nozzle has removable discs, which make it possible to change the diameter and the direction of the fire curtain.

### Dualarm System

An illustrated folder has been issued by The Gamewell Company, Newton, Mass., to describe their "Dualarm" system. This system sounds a warning in the school that is so protected, and at the same time calls the municipal Fire Department, without pulling a separate box. The system has remote control stations for turning in alarms.

The company has also issued a four-page illustrated condensed catalogue of manual and automatic fire alarm and kindred equipment. The company believes that the brevity of the descriptions will make this folder of value as a source of quick reference material.

### New Type First Aid Kit

A new type first aid kit has been developed by the Davis Emergency Equipment Company. It consists of two baked enamel steel cases, an outer one which can be permanently attached to a wall by means of screws, and an inner one which fits inside the outer case. When needed, the inner case can be unlocked by a twist of the handle, and the case with the first aid supplies, carried to the scene of the accident.

The assortment of supplies in the kit depends on the use for which it is intended, but there are bandages, material for treating burns and sprains, eye dressings, etc.

### Department Communication System

The Graybar Electric Company, 420 Lexington Avenue, New York, N. Y., has issued an 18-page illustrated catalogue to describe fire department communication system equipment developed by the Horni Signal Manufacturing Company. Complete fire alarm service is offered. The catalogue enumerates the type of fire alarm system for various size cities; describes non-interfering fire alarm boxes; multi-fold system boxes; battery equipment and rectifiers; switchboards, fire alarm transmitters, etc.; registers, horns, gongs, bells, etc.

### Midwestern Rubber Clothing

Midwestern Manufacturing Company, Mackinaw, Ill., has just released Catalogue No. 935, which illustrates the styles of rubber clothing it makes. The line includes firemen's coats, bunker pants, leggings, hats, boots, mittens, etc.

### New Breathing Apparatus Announced

The Bishinger-Koehler Manufacturing Company, Pittsburgh, Pa., is manufacturing a new one-hour oxygen breathing apparatus for use in fire fighting and rescue work. It is available in two styles—one, a mouth-breathing type with nose clip and mouth piece; the other, a face-piece type similar in most respects to a gas mask face-piece, for face protection.

B-K Breathing Apparatus

The accompanying illustration shows the mouth-piece type.

"This new B-K One-Hour Oxygen Breathing Apparatus," states the manufacturer, "fills a definite need in fire fighting and rescue work. It is the only one-hour type of oxygen apparatus available and is unusually valuable for emergency use, weighing less than twenty-five pounds. Moreover, it contains a new reducing valve mechanism, invented by F. W. Koehler, and having only four moving parts. The valve mechanism automatically controls the flow of oxygen to the wearer, when and as needed. Firemen and rescue workers, when equipped with this apparatus, can enter oxygen deficient or highly concentrated gaseous atmospheres in safety."

**A parade and muster** was held at Portland, Me., sponsored by the New England States Veteran Firemen's League. The quarterly meeting of the state fire chiefs association took place on the same day. Thirty-seven hand engines took part in the parade.

**All Metal Aerial Ladder Demonstrated by Pirsch**

The photograph shows a Pirsch 100-foot aerial ladder, constructed entirely of metal. To show the strength of the ladder, a 200-pound man stood on the tip of the ladder when it was extended in a horizontal position.

# This Suit Can Take It!

### Thousands of Firemen in All Parts of the Country Have Proven It Best

FOR over 30 years Globe Suits have stood the test of hard service and are today the best known and most widely worn firemen's suits in the country. They are warm, easy to work in, durable and good looking. Coats have wide chest protector flap to keep water out and warmth in. They are lined with either wool or light weight fabric and interlined with waterproof material. Pockets have patent stays to prevent sagging or tearing. Sleeves have warm wristers if you want them. Order blanks, sent on request, make measuring and ordering easy. Ask for them.

No. 240
**COATS**
35 inch length, warm, wool lined:
**$10.00**
40 in., $10.50 45 in., $11.00
50 in., 11.50 55 in., 12.00

*Write for Catalog*

Other Styles at Other Prices

No. 270
**PANTS**
to match coat. Waterproof, warm, with lock snap, quick hitch. Pair:
**$7.50**

**GLOBE MFG. CO., PITTSFIELD, N. H.**
*Makers of Genuine Globe Suits For Over 30 Years*

# Globe DURABLE FIREMENS Suits

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REDUCE WATER DAMAGE AND INSURANCE RATES

**SHUREDRY** is the cover that fire chiefs all over the country have endorsed for superior service. Made of our special process chemically treated canvas, they resist both heat and cold. SHUREDRY covers will not crack or split on your storage shelves—easy to handle—give better service. SHUREDRY covers pay for themselves several times over in reducing water damage and are an essential part of the equipment of progressive chiefs everywhere.

*Address our plant nearest you for full information and prices.*

**Fulton Bag & Cotton Mills**
Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS
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# "SIZE UP" this low-cost FLOODLIGHT

With the new Homelite portable power plant you can get steady, brilliant floodlighting for night fires and still keep within your budget.

***Low in cost — Generates 1250 watts — Runs several floodlights — Weighs only 89 pounds***

One man carries it anywhere—gets it going quickly, even in the coldest, wettest weather. It needs no further attention—voltage remains constantly at 110. Built-in air-cooled gasoline engine is dustproof and waterproof. Improved features prevent flooding, freezing and overheating. It rides on a running board.

Homelites know the smell of smoke. In large cities and small towns, there are more of them in fire-fighting service than all other makes combined.

A smaller size generates 650 watts and weighs only 71 pounds. Send for bulletins.

**HOMELITE Corp.**
911 RIVERDALE AVENUE · PORT CHESTER, N. Y., U. S. A.

**DAYTON**
*Weather-proof*
**SUITS**

FIREMEN'S COATS
As low as
$7.50

Warm, comfortable, long wearing Bunker Suits. Coats of black, white or tan canvas, flannel or felt lined with waterproof interlining. Reinforced at points of wear. Wide storm flaps, heavy duty snaps. We also handle knee or storm boots.

FIRE DEPARTMENT SUPPLIES
We can supply anything you may need in the line of fire fighting appliances. Let us bid on your requirements.

DAYTON FIRE EQUIPMENT CO.
1109 W. Third St. Dayton, Ohio

**CAIRNS** LOW HEAD— CUSHION LINED **HELMET**

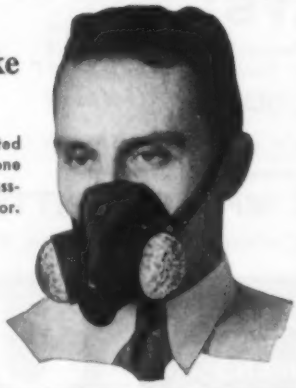
COMFORTABLE AS YOUR OLD FELT HAT; WON'T SHAKE OFF

Never go to a fire without the protection of a good helmet. It may save your life.

DESIGN - - MATERIALS - - CONSTRUCTION
ALL PROVED RIGHT BY YEARS OF ACTUAL USE
*Ask for Catalog 228*

CAIRNS & BROTHER
444 LAFAYETTE STREET - Established 1836 - NEW YORK

Cover's Dupor Two Sponge Smoke Respirator



*TWO* large fine selected Sponges do the trick that one alone can't. At last, a successful *POCKET* Smoke Protector.

Price, $24.00 Dozen
Sample, $2.00, Postpaid

Address:
H. S. Cover, Station A
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**BRUNSSEN CAPS**

First Choice in Many Fire Departments

There seems to be a trend toward the 8 point cap for fire departments. It is one of the wide variety of caps by Brunssen. CATALOG AND PRICES ON REQUEST.

GEORGE BRUNSSEN CO., Inc.
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**FIRE DEPARTMENT SUPPLIES**

Wire, write or phone us if you are in need of equipment or supplies. We handle a very complete line and will be glad to supply you any item you need. We'll be glad to quote you prices on any item.

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MANUFACTURING COMPANY
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No One Will Ever Know All There is to Know About the Science of Fire Fighters . . .

THAT'S what makes the game so fascinating—that's why chiefs who want to keep up-to-date read every issue of FIRE ENGINEERING. We pack between the covers of this magazine each month valuable information for those of you who want to know more about fighting fire. The information you get in reading FIRE ENGINEERING regularly will result in your doing a better job—winning credit—winning promotion. The cost is only $2.00 a year, shall we start your subscription with our next issue?

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**TANNOSPRAY FOR BURNS**

THE TANNOSPRAY KIT, for fire department use, is the only self-contained TANNIC ACID unit that is entirely practical for emergency treatment of burns on the scene of the fire.

Non-technical, it can be operated correctly by the layman with fine results.

TANNIC ACID is recognized as being the only thoroughly scientific treatment for burns of both a major and minor nature.

Your post-card will bring complete literature, specifications, price information and other kindred data.

No obligation, of course.

ILLINOIS EQUIPMENT CO.
2507 RIDGELAND AVE-BERWYN, ILL.

## Fire Prevention Week Brings More Calls

Pittsburgh, Pa., celebrated Fire Prevention Week by answering the greatest number of false alarm calls in one week in the history of the department, and by fighting a spectacular three-alarm fire. In all the department had forty-one false alarms for that week.

The three-alarm fire swept through the four-story brick candy factory and wholesale novelty warehouse of the Sterling Specialty Company a short distance east of the downtown business area.

A still alarm was received at 5:50 a.m. The officer of the first company found a fierce fire in the basement and smoke rolling out from all parts of the structure. Fire was spreading rapidly to the upper floors. A box alarm was sent at 5:52 a.m. When Battalion Chief W. M. Graves arrived, he immediately sent in a second alarm, and a third

Three-Alarm Fire During Fire Prevention Week

was ordered at 6:05. The last call brought Chief Richard L. Smith.

Fire had started in the basement and had spread through the four floors and out through the roof. In extinguishing this fire, twelve pumper streams were used, including a water tower stream, three turret streams and two hydrant streams. About 950 feet of 3-inch, and 6,250 feet of 2½-inch hose were used by two high pressure pumpers, four 1,000-gallon and two 750-gallon pumpers. In addition, 350 feet of one-inch lead line was used to extinguish the smoldering embers. The fire was out in three and one-half hours.

WILLIAM E. PATTERSON.

## Coal Shed Fire Endangers Oil Tank

Two firemen and a 20-year old civilian were injured when flames gutted the huge coal sheds of the Michael Hoffman Fuel Company, on Housatonic Avenue, Bridgeport, Conn., on September 21. Three alarms were sounded for the fire owing to the location of a cluster of oil tanks thirty feet from the blazing sheds.

The fire was caused by a bolt of lightning at the height of an electrical cloudburst and thunderstorm that shook the downtown section of the city.

The first alarm was sent at 8:08 p.m. Engine Companies 1, 2, 4, 5; Truck Companies 2 and 3 and Chemical Company 1 responded with Assistant Chief Patrick J. Neary in command. A second alarm was immediately sent in, which brought Engine Companies 10 and 12 with Truck Company 1. Chief Thomas F. Burns responded on this alarm and took command.

Owing to the danger of fire leaping to the huge oil tanks, Chief Burns ordered a third alarm, which called Engines 3, 9, 6 and 7. It was the first three-alarm fire in Bridgeport in several years.

The chief damage was that done to the huge conveyors which carried coal from boats in the harbor alongside the plant to the sheds. These conveyors run the entire length of the shed and were totally destroyed.

The recall was sounded at 8:50 p.m.

THOMAS F. MAGNER.

## Fire Extinguishers Wanted for Subway

The 8th Avenue Subway System in New York received bids on October 25 for furnishing and delivering 430 fifteen pound $CO_2$ and 70 twenty-pound $CO_2$ fire extinguishers, for use along various lines of the system.

The contract, when awarded, is to be financed by a loan or grant by the Federal Emergency Administration of Public Works, subject to the provisions of the National Industrial Recovery Act.

## Fire Show to be Held in New York

New York City residents will soon have an opportunity to gain intimate knowledge of the operation of its Fire Department. A show is to be held at the Madison Square Garden on the afternoon and evening of November 23 to show how firemen are trained and how actual rescues are made. Receipts from the show will be used for the purchase of an ambulance for the department. A skeleton of a tenement house will be erected in the garden, the house will "catch fire" and the "tenants" will be saved. The exhibition will be known as the "Midnight Alarm."

At present the department has one ambulance to cover the entire city, and while there are ambulances available from the various hospitals, the department ambulance carries special equipment such as inhalators.

## Westchester Chiefs Discuss Assistance

With an attendance of 74 Chiefs and other Fire Department officials, the Fire Chiefs' Emergency Plan held its first meeting of the season at the headquarters of the Fairview Fire Department, Greenburg Township, N. Y., on the evening of Wednesday, October 16. Chief Krows presided, and the members were welcomed by Warren D. Benedict, Town Councilman, representing the Supervisor of Greenburg, who was unable to be present.

Battalion Chief Wooley, of Larchmont, Chairman of the Educational Committee, made a report in which he suggested a series of related subjects be adopted for the Plan's meetings, to be handled by men qualified to speak upon the various topics.

A feature of the evening was a paper read by Chief John J. Brennan, of Pelham Manor, on "How Can Volunteer Fire Departments Be of Aid to Paid Fire Departments?" Chief Brennan emphasized the importance of some arrangement by which a call for aid should come through the Chief or some one designated by him for the purpose. A code word previously agreed upon is a safeguard against false calls for aid. The method of such aid should be carefully considered beforehand, so that when the time arrives the assisting department may know just what help is to be given and how. The assistance of several volunteer departments can be especially valuable in case of a rapidly spreading fire. There should be someone on hand with authority to direct the assisting apparatus. Traffic congestion is a very serious problem, especially where the police arrangements are inadequate. There is also the risk of accident to apparatus and injury to the men on call. The paper was discussed by Ex-Chief Mulcahey, of Yonkers and Battalion Chief Wooley.

On invitation of Chief Gibson, it was decided to meet at Mount Vernon on the evening of Wednesday, November 20. Refreshments were served by the local department.

**Fred A. Nickel, was elected Chief** of the Manhasset-Lakeville Fire Department, Manhasset, N. Y. Edward C. Smith is President and Eric Hedner, Secretary.

## Home Fire Hazards Demonstrated at Fair

Opportunities for the outbreak of fire in the home, through the neglect of fundamental fire prevention rules, were demonstrated by the Fire Department of Lincoln, Neb., at the Nebraska State Fair. From two to four hundred persons witnessed each of the four demonstrations that were given every day of the fair. People came out to see the display, long before the fair opened.

As an attention getter, there was a model town, which measured fourteen by twenty feet. It was complete in every detail. Adjoining this minature town was a demonstration booth, provided with a public address system. The entire demonstration lasted twenty minutes.

Charles Horham, City Fire Inspector, explained how the overloading of a circuit would blow a fuse, and how by replacing a blown fuse with a penny, fire may start. The

**Two Views of the Lincoln, Neb., Fire Prevention Exhibit**

Upper, view of the model town, and part of the demonstration booth shown at left. Lower, demonstration booth where several forms of home hazards were exhibited. From left to right, the men are Chief Louis Hansen, and Charles M. Horham, City Fire Inspector.

second experiment showed, with the aid of visible gasoline fumes, how such volatile vapors can travel a long distance, come in contact with a spark and then flash back. He showed how easy it was for fire to flare up when kerosene was used to hurry a slow-burning kitchen fire. The third part of the show demonstrated how simple it was for corn starch to cause an explosion, when it was dropped over an open flame. At night, in cooperation with the Omaha Fire Department, there were shown the various methods of rescue work.

During Fire Prevention Week, the demonstration equipment was removed to a show window in the busiest part of the city. Four demonstrations were given daily, and by means of a loud speaker, the crowd outside the store could listen to the lecture. In addition, there was a fifteen-minute radio talk each day on a different topic.

## Pennsylvania Firemen Meet

The fifty-sixth annual convention of the Firemen's Association of the State of Pennsylvania, was held at Connellsville, Pa., September 29-October 5. Deputy Chief J. J. Waldron of the New York Fire Department was one of the speakers.

There were demonstrations of rescue work, pumpers and other appliances. A number of entertainment features were provided. The convention closed with a parade for which many prizes were awarded.

## Iowa Firemen Hold Annual Convention

The fifty-eighth annual convention of the Iowa State Firemen's Association was held at Oelwein, September 17-18. Most of the convention was devoted to department contests.

Talks were given by Chief M. F. Gunderson, Oelwein; Vince Pyle, State Fire Marshal, Des Moines, and Harry K. Rogers, Western Actuarial Bureau, Chicago.

Delph Becker, Oelwein, was elected President; Vince Pyle, State Fire Marshal, Vice-President; Chief Wright Hedges, Atlantic, Second Vice-President; Capt. Lindquist, Des Moines, Third Vice-President; Paul A. Soener, Independence, Secretary-Treasurer.

The age limit for members has been changed from thirty-five to forty.

The 1936 convention will be held at Eldora. Belle Plaine made a strong bid for the meeting.

## Wisconsin Chiefs Elect Schneider

Chief Ernest Schneider, Cedarburg, was elected President of the Wisconsin State Fire Chiefs' Association at the seventh annual convention held at Hudson. The following were among the talks given at the convention:

"Safety in Transportation," by J. C. Yocum, Safety Engineer, St. Paul, Minn.

"Fire Prevention Campaign," by G. D. Lovejoy, Stevens Point, Wis.

"Training of Firemen," by George S. Lockhart, Battalion Chief, Minneapolis, Minn.

"Salvage," by John Townsend, St. Paul Fire Department.

"First Aid," by F. S. Crawford, U. S. District Engineer, Duluth, Minn.

"Ventilation," by Chief William Sudeith, St. Paul, Minn.

Chief Peter Steinkellner, Milwaukee, gave a report of the legislative work during the past session of the legislature in behalf of fire protection and department improvements.

Other officers elected are: Chief Henry Hanson, Rhinelander, Vice-President; Chief August Simon, Ladysmith, Secretary; Chief James J. Puplic, Manitowoc, re-elected Treasurer. The next convention will be held at Waukesha.

## Mid-Hudson Chiefs Discuss Coverage Assignments

A special meeting of the Mid-Hudson Harlem Valley Fire Chiefs Association was held at the Exempts Home in Poughkeepsie on Wednesday, October 2 for the sole purpose of checking and correcting the tentative Coverage Assignment cards. Twenty-seven of the thirty-six Fire Departments represented in the association approved or modified their coverage at this meeting which was attended by about sixty-five members and guests.

Action was taken on a resolution which would put the association on record as being unwilling to give aid to such areas of Dutchess and Putnam Counties which do not maintain a regular fire district under the Town Law and which do not maintain a reciprocal type of fire apparatus; the feeling being that all areas should shoulder the burden of fire protection equally and not expect outside aid in case of fire when no apparatus or district is regularly maintained. This resolution is to come up for definite action at the November 2 meeting at Red Hook. Captain Parker, Woodbridge, Conn., Fire Department, advised against stripping any areas of apparatus, even under a Coverage Plan.

Felicitations were offered the Brewster Fire Department on its purchase of a new Lincoln ambulance. Tentative plans were made for the December 7 meeting, to be held at the rooms of the Fairview Fire Department, Poughkeepsie, N. Y., at which time an election of officers for 1936 will be held.

**A 500-gallon pumper** will be purchased by the village of Pittsford, N. Y.

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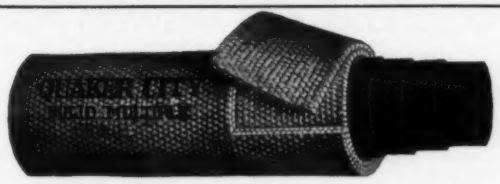

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# FALSE ALARMS

—*Courtesy New Yorker*

**"Psst, Joe! Whadda you say?"**

### FIRE DEPARTMENT RULES

Those of the night platoon desiring to respond to alarms during their tour of duty will leave word at the watch desk before retiring.

Members who feel indisposed should request Fire Alarm Headquarters to transmit alarms in writing by messenger instead of by bells.

The man on watch will be held accountable for any runs made by the Company on false alarms.

Drivers will be responsible for the apparatus until the fireground is reached; after that a ballot will be taken to elect the officer in charge.

Before responding to box alarms the first assistant driver will test all hose, gauge the air in the tires, measure the gas in the tank, and take the specific gravity of the battery; then signal to "shove off."

On still alarms the Chief Driver will first report to the scene in a taxicab, then send back word whether or not the Company is to respond.

On responding to all first, second, third and general alarms, right of way will be given to lady drivers, fire fans, petting parties and mutt dogs.

When two pieces of apparatus approach a given intersection from different directions, both shall come to full stop, and neither shall proceed until the other has passed.

On responding to alarms along main highways a white handkerchief will be tied to the radiator cap, green and red-cross flags will be flown from opposite sides of the truck, and bell and siren operated to advise motorists not to grant right of way to the apparatus.

Should a motorist pull over to the side to let fire apparatus pass, his number should be taken and appeal made for revocation of his license because of mental deficiency.

On fires in hotels and exclusive apartments firemen will use the servant's entrance and deliver their equipment via the dumb waiter or servidor.

Before entering burning homes on the Boulevard, afternoon literary meetings and sororities, the Chief of Department's secretary will have a formal communication sent to the hostess apologizing for the urgency of the visit.

Before beginning operations on an arson fire the owner of the business will be looked up and his wishes ascertained as to the extent of loss desired in keeping with the amount of insurance carried.

Reprinted from a folder issued by Frank Gillooly, of Federal Electric Company. Extra copies may be obtained by addressing Mr. Gillooly at 551 Fifth Avenue, New York City.

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When he was a boy, the admiring relatives would say: "He's a smart boy —you'll hear from him some day." They do—whenever he needs money.

---

"What model is your car?"

"It isn't a model. It's a horrible example."

---

### NOT COURTEOUS

As smoke poured from the windows, a gallant fireman climbed a ladder, and as the crowd watched with astonishment and admiration, he entered the building to emerge later with a corpulent woman in his arms.

As the smoke-eater stepped onto the ladder, he slipped, and the two persons fell to the ground. The woman landed safely but rather heavily on the prostrate hero.

One of the city officials who watched the rescue rushed over and said:

"You're a very brave fellow."

"Brave, maybe, but I'm no gentleman, or I'd have let the woman go first."

---

A beauty specialist stated, "Not one woman in ten could pass a beauty test." As a result, not one woman in ten can pass a beauty parlor.

---

### HANDICAPPED

The subject of literature was discussed at the monthly meeting of the Ladies' Auxiliary.

One woman remarked to her neighbor:

"I've often heard it said that there isn't money in literature, and now I'm absolutely convinced of that fact."

"What makes you so sure?"

"It's because of my husband," continued the woman in a whisper. "He never seems to have a penny since he got acquainted with those men who make books."

---

Remember back to the good old days. Then charity was a virtue instead of an industry.

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An example of slow torture is a ride with an old-fashioned girl in a second-hand Model T Ford.

—*Drawing by "Art" Espey*

**"Ah ain't breakin' de rules, Captain. Yoh all dun tol' me to be ready to 'roll' any minit an' I'ze jes' practisin'—das all!"**

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## CONVENTION DATES

Nov. 16—PROPOSED NATIONAL ASSOCIATION OF FIRE FANS. Meeting to organize such association. Book-Cadillac Hotel, Detroit, Mich. Address, Paxton Mendelssohn, Chief, Box 12 Associates, 2428 Buhl Bldg., Detroit, Mich.

Nov. 25—MASSACHUSETTS FIRE PREVENTION ASSOCIATION. Next Meeting, Central Fire Station, Somerville, Mass. Secretary-Treasurer, Louis A. Novak, Norfolk, Mass.

Dec. 7—MID-HUDSON-HARLEM FIRE CHIEFS' ASSOCIATION. Regular Meeting, Fairview Fire Department, Poughkeepsie, N. Y. Secretary, Chief Henry F. Drake, Clinton Corners, N. Y.

June, 1936—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 31st Annual Convention, Camden, S. C., exact date to be decided later. Secretary-Treasurer, John H. Wohlers, Chief, Fire Department, Charleston, S. C.

June 17, 1936—NORTHWESTERN OHIO FIREMEN'S ASSOCIATION. 63rd Annual Convention, Bowling Green, Ohio. Secretary, J. W. Gardner, Ashland, Ohio.

June 24-26, 1936—MARYLAND STATE FIREMEN'S ASSOCIATION. 44th Annual Convention, Hagerstown, Md. Secretary, George R. Lindsay, Hagerstown, Md.

July 7-10, 1936—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. 4th Annual Convention, Grand'Mere, Que., Can. Secretary-Treasurer, Chief Robert Harrington, Fire Dept., McColl-Frontenac Oil Co., Ltd., Windsor Hotel, Montreal.

Aug., 1936—NATIONAL MUNICIPAL SIGNAL ASSOCIATION. 41st Annual Convention, New York City. (Exact date to be announced later.) Secretary, W. H. Harth, Columbia, S. C.

Aug., 1936—UTAH STATE FIREMEN'S ASSOCIATION. 36th Annual Convention, Ogden, Utah. (Exact date to be decided later.) Secretary, John J. Creedon, P. O. Box 25, Bingham Canyon, Utah.

## Department and Other Reports Received

**Belmont, Mass.**—Annual report of the Fire Department of the town of Belmont, Mass.; ten pages.

**Minneapolis, Minn.**—Annual report of the Fire Department of Minneapolis, Minn.; forty-six mimeographed pages.

**Philadelphia Fire Patrol**—Sixty-fifth annual report of the Fire Insurance Patrol, Philadelphia, Pa.; twenty-nine pages.

**New Jersey State Firemen's Association**—Fifty-seventh annual convention report of the New Jersey State Firemen's Association held at Atlantic City; 175 pages.

**Indiana Firemen's Association**—Proceedings of eighteenth annual convention of the Indiana Firemen's Association held at Ft. Wayne, Ind.

## Connecticut Fire Laws Compiled

A feature of the regular meeting of the Fairfield County Fire Chiefs' Emergency Plan was the reading of excerpts from a book giving a digest of all the fire laws of the state of Connecticut. The meeting was the first of the season and was held in the Community Hall, Cresent Street, Glenbrook (Town of Stamford), Conn., on the evening of Wednesday, October 23. In the absence of President Gisborne, First Vice-President Stapely presided, and called upon Frank McMahon, Second Selectman, who welcomed the members. Chief Victor Veit of Stamford, First President of the Plan, who was present, thanked the members for their kind words of sympathy and the flowers sent him during his prolonged and severe illness.

Assistant Chief Bernard Scully said that the tax of $3 per head applied to all firemen, including volunteers. It was proposed to push matters at the next session of the state legislature, with a view to the repeal of the tax.

Chief Scully also reported for the Oil Burner Committee that a letter had been forwarded to each municipality suggesting a ruling forbidding storage of fuel oil above the first floor. The idea would be to get the reaction of each community and then go ahead on a general law.

Ex-Chief Beckerle asked that all who had oil burner codes send copies to the committee. He said that in Danbury only 50 gallons were allowed per family.

Fire Commissioner Clifford Merwin, of Shelton, pointed out that ordinances varied in different communities. Where there is no ordinance, however, there is nothing to prevent the storage of over 50 gallons above the first floor, or in attics. Captain Dawkins, Secretary of the Plan of Westchester County, N. Y., said that Port Chester, N. Y., had adopted an ordinance with teeth in it, which would eliminate hazards and reduce fire loss.

Chief Veit suggested that the heads of Fire Department should at once take the matter up with the town or village authorities. If left too long it would be too late.

Chief Brencher, for the Legislative Committee, read extracts from the book giving a digest of all laws in Connecticut pertaining to Fire Departments, fire fighting and fire protection, prepared by his committee through AAA workers. This book is very complete and covers every law on the statute books of the state on the subject. On motion, it was decided to print the book and send copies to all of the members. Copies would also be available to others desirous to purchase them.

On account of the regular meeting night falling on Thanksgiving eve, it was decided to meet on the third Wednesday of November, the place to be decided later. Refreshments were served by the local department.

## Ex-Chief Dougherty Speaks to Volunteers

Thomas F. Dougherty, formerly Assistant Chief of the New York Fire Department, was the guest speaker at the meeting of the North Shore Fire Council, held at Glen Cove, N. Y., on October 11. The meeting was part of the community's observance of Fire Prevention Week.

Chief Dougherty told of the dangers of gasoline when encounted in fighting fires, and stated that it was the most treacherous of all flammable substances. He also explains the theory of ventilation and applied it to the types of buildings constructed in the vicinity. A number of incidents that occurred during his forty-eight years in the New York Fire Department, were related to bring out points in his talk.

## Military Post Honors Chief Sarran

The October 4, 1935, issue of *The Military Service News*, the issue which appeared during Fire Prevention Week, was dedicated to Chief J. G. Sarran, of San Antonio, Tex. The newspaper which claims it "covers the army like pay day and four times as often," is published for the men at Ft. Sam Houston, Tex.

The issue presents the service record of Chief J. G. Sarran and his four brothers, two of whom lost their lives in the World War. The newspaper describes the excellent manner in which Chief Sarran and his department have cooperated with the government in protecting military and other property, and of his humanitarian work in providing rebuilt toys for needy children at Christmas.

## Bulletin for Fire Prevention Week

The staff of the Bureau of Fire Prevention, Denver, Col., prepared a six-page mimeographed pamphlet for distribution to the Fire Department, schools, clergy, newspapers, civic organizations local broadcasting stations, etc. It summarized the fire losses in the city from 1920-1934, and presented a number of outstanding facts regarding the value of fire prevention. A similar bulletin issued the previous year was readily received, and brought good results.

**Winsted, Conn., has voted** $9,500 for the purchase of a ladder truck. The Purchase Committee consists of Chief Don S. McPherson, Clarence H. Bunnell, and Ralph V. Tiffany.

**Many attended the ladies' day** outing of the Fire Chiefs' Club of New Hampshire held at Hampton Beach recently. Invitations were extended to the State Association, Fire Chiefs of Maine, and the Fire Chiefs' Club of Massachusetts.

**Dr. T. H. Kilmer** exhibited motion pictures of the New York Fire Department at the quarterly meeting of the Nassau County Firemen's Association held at West Hempstead, L. I., N. Y., on October 16. Automobile emblems were distributed to the members.

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14 Battery Zincs for Fire Alarm Batteries
15 Bells, Fire Alarm, Municipal
16 Body Equipments
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18 Brakes, Air
19 Brake Linings
20 Brooms, Fire
21 Building Materials, Fire Retardant
22 Caps, Firemen's
23 Chains, Non-Skid, Fire Apparatus
24 Chassis for Fire Apparatus
25 Chemical Engines and Tanks
26 Chimney Fire Fuses and Compounds
27 City Service Trucks
28 Coats and Suits, Firemen's Quick Hitch
29 Combination Chemical and Hose Cars
30 Cutting and Welding Equipment, Blow Torch
31 Cutting and Welding Equipment, Electric
32 Deluge Sets
33 Door Openers, Fire Station, Automatic
34 Electric Light Plants
35 Extinguishers, Calcium Chloride
36 Extinguishers, Carbon Dioxide
37 Extinguishers, Soda-Acid
38 Extinguishers, Carbon Tetrachloride
39 Extinguishers, Foam
40 Extinguishers, Powder
41 False Alarm Prevention
42 Fire Boat Nozzle Equipment
43 Fire Department Supplies, General
44 Fire Exit Devices, Door Opening
45 Fire Alarm Posts
46 Fire Escapes, Portable
47 First Aid Equipment
48 Flare Lights
49 Flashlights, Hand
50 Flood Lighting Equipment (Lamps, Cable, Reels, etc.)
51 Foam Generating Apparatus
52 Foam Liquid for Extinguishers
53 Gas Masks and Respirators
54 Gas and Smoke Helmets
55 Gas and Smoke Generators
56 Goggles, Firemen's
57 Helmets, Metal, etc.
58 Hose Bridges
59 Hose Carts, Reels and Racks
60 Hose Clamps
61 Hose, Fire
62 Hose, Chemical
63 Hose Holders
64 Hose Jackets
65 Hose Standardization Tools
66 Hydrant Draining Pumps
67 Hydrants, Fire
68 Jacks for Fire Trucks
69 Jacks, Shoring and Prying
70 Ladders, Fire
71 Lightning Arresters
72 Motorcycles, Fire Dept. Equipped
73 Nets, Life
74 Nozzles, Pipes and Miscellaneous Brass Goods
75 Packings, Pump
76 Pads, Pole Hole
77 Paints, Fire Resisting
78 Priming Ether, Motor
79 Pumping Cars, Standard
80 Pumping Cars, Foam
81 Pumps, Fire Apparatus
82 Pumps, Fire Service, Stationary
83 Pumps, Portable for Fire Protection
84 Record Books, Fire
85 Relief Valves
86 Reviving Apparatus, Oxygen
87 Rubber Clothing
88 Salvage Covers
89 Searchlights
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91 Shirts, Firemen's Special
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106 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid
107 Tractors
108 Traffic Clearing Systems
109 Triple Combination Pumping Cars
110 Uniforms
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114 Whistles, Fire Alarm, Steam
115 Whistles, Fire Apparatus
116 Wrecking Trucks

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PLATE X

2½ Gal. Anti-Freeze Pressure Type. Operated by inverting and striking spindle on ground. Liquid discharges in powerful steady stream. Copper, nickel or chromium finish.

PLATE P-2½

2½ Gal. Anti-Freeze Pump Type. Saves annual recharging. Galvanized or copper tank. Red enamel, copper, nickel or chromium finish.

PLATE P-5

5 Gal. Anti-Freeze Pump Type. Hand pump throws 45 ft. continuous stream. Heavy copper or galvanized tank. Red enamel, copper, nickel or chromium finish.

All three approved by Underwriters Laboratories and Factory Mutual.

## EXTINGUISHER HOLDER

PLATE 1001-A

Improved extinguisher holder made of solid malleable iron casting throughout. Suitable for either right or left hand installation. New cast brass lock positively prevents road shock opening holder.

Holders for 2½ or 5 gal. extinguishers.

**ELKHART BRASS MFG. CO.**

*Makers of Fire Department Brass Goods and Supplies*

ELKHART, INDIANA

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# FABRIC FIRE HOSE

## ON THE FIRING LINE AT MOST FIRES

Strategy and skill play a big part in successful extinguishment of fires. Knowledge of and selection of good equipment plays a vital part, too. Wise fire chiefs select the best equipment money can buy. Thousands of them have been selecting FABRIC FIRE HOSE for many years. They have found it thoroughly dependable and far more serviceable than ordinary or "bootleg processed" fire hose, for FABRIC is the only hose properly treated with wax and gum. It is still the only treated hose you can buy that employs the original method of impregnating every strand of thread with wax and Para gum.

When you buy hose, buy *proven* dependability and service. Buy FABRIC FIRE HOSE, for that is the only *treated* hose whose treatment advantages have been *proven in years of service.*

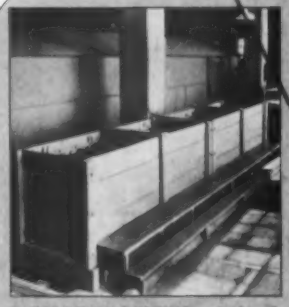
The **ORIGINAL PRODUCERS** of **GENUINE WAX & GUM TREATED FIRE HOSE**

## FABRIC FIRE HOSE COMPANY

SANDY HOOK, CONNECTICUT

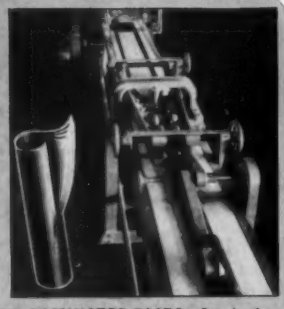
*We shall appreciate your mentioning* FIRE ENGINEERING *when writing advertisers*

# THE HOSE YOU CAN BE SURE OF



**2. MILDEW PROOFING** — Antiseptically treating EUREKA Fire Hose Fabric with mildew repellant solution.

**1. WEAVING**—This illustrates the weaving of PARAGON "Multiple Woven" Fire Hose Fabric. The better fabric known.



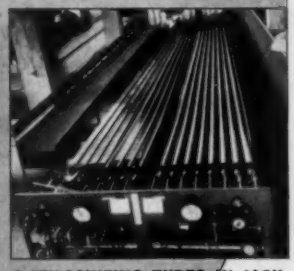
**3. LAMINATED PLIES**—Producing EUREKA Laminated Ply Fire Hose Tubes, the new and better tubes.

BE SURE of your fire hose. Be sure that it will stand up under all kinds of conditions—that it will protect the lives of your firemen and the lives and homes of the people in your community—that it is made by a well-known manufacturer, of the best materials throughout, in a modern, fully equipped factory.

If you are sure that your hose meets these requirements, you must be using a Eureka brand of hose.

Eureka, with the most complete line of quality fire hose ever made and over 60 years of manufacturing experience, is the largest manufacturer of fire hose in the country. Be sure to call in a Eureka representative and let *him* know your hose needs.

**5. ATTACHING COUPLINGS**—Quality Couplings are an important feature of quality Fire Hose.



**4. VULCANIZING TUBES IN JACKETS**—Each length of hose is cured on individual Steaming Head to eliminate subsequent distortion when under hydrostatic pressure.

**6. TESTING FIRE HOSE**—All Brands of EUREKA Fire Hose are tested under hydrostatic pressure before shipment.

**EUREKA FIRE HOSE FROM RAW MATERIALS TO FINISHED PRODUCT**

**EUREKA FIRE HOSE DIVISION**
of
United States Rubber Products, Inc.
1790 BROADWAY NEW YORK, N. Y.

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